



CONTRA COSTA
CLEAN WATER
PROGRAM

Thomas E. Dalziel
Program Manager

February 1, 2012

Bruce H. Wolfe, Executive Officer
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

Ms. Pamela Creedon, Executive Officer
California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114

Dear Mr. Wolfe and Ms. Creedon:

Enclosed is the City of Pittsburg's Short-Term Trash Reduction Plan submitted in accordance with Provision C.10.a. in NPDES Permit No. CAS612008 issued by the San Francisco Bay Regional Water Quality Control Board, and/or NPDES Permit No. CA0083313 issued by the Central Valley Regional Water Quality Control Board.

I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted, is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Sincerely,

A handwritten signature in blue ink, reading "Jolan Longway".

Jolan Longway
City of Pittsburg

Baseline Trash Load and Short-Term Trash Load Reduction Plan

Submitted by:



City of Pittsburg
65 Civic Avenue
Pittsburg, CA 94565-3814

In compliance with Provisions C.10.a(i) and C.10.a(ii) of Order R2-2009-0074

JANUARY 25, 2012

Page Intentionally Left Blank

**CITY OF PITTSBURG
SHORT-TERM TRASH LOAD REDUCTION PLAN**

CERTIFICATION STATEMENT

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted, is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature by Duly Authorized Representative:

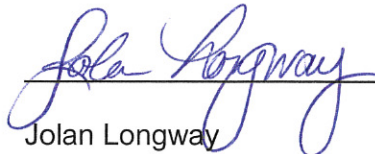
 1/25/12
Jolan Longway Date
Civil Engineer II

TABLE OF CONTENTS

LIST OF TABLES	VI
LIST FIGURES	VII
ABBREVIATIONS	VIII
PREFACE	9
1.0 INTRODUCTION	2
BASELINE TRASH GENERATION RATES PROJECT	2
TRASH LOAD REDUCTION TRACKING METHOD SUMMARY	3
SHORT-TERM TRASH LOAD REDUCTION PLAN	3
2.0 BASELINE TRASH LOADING ESTIMATE	5
DEFAULT TRASH GENERATION RATES (REGIONAL APPROACH)	5
PERMITTEE CHARACTERISTICS	6
<i>Land Use</i>	7
PERMITTEE-SPECIFIC BASELINE TRASH LOADING RATES	8
3.0 LOAD REDUCTION CALCULATION PROCESS	11
STEP #1: EXISTING ENHANCED STREET SWEEPING	11
STEP #2: TRASH GENERATION REDUCTION CONTROL MEASURES	12
STEP #3: ON-LAND INTERCEPTION CONTROL MEASURES	13
STEP #4: CONTROL MEASURES THAT INTERCEPT TRASH IN THE MS4	13
STEP #5: CONTROL MEASURES THAT INTERCEPT TRASH IN WATERWAYS	13
STEP #6: COMPARISON TO BASELINE TRASH LOAD	13
4.0 ENHANCED TRASH CONTROL MEASURES	14
CR-1: SINGLE-USE CARRYOUT PLASTIC BAG ORDINANCE	15
<i>Baseline Level of Implementation</i>	15
<i>Enhanced Level of Implementation</i>	15
<i>Reduction from Implementing Control Measure</i>	16
CR-2: POLYSTYRENE FOAM FOOD SERVICE WARE ORDINANCE	17
<i>Baseline Level of Implementation</i>	17
<i>Enhanced Level of Implementation</i>	17
<i>Percent Reduction from Enhancements</i>	17
CR-3: PUBLIC EDUCATION AND OUTREACH PROGRAMS	19
<i>Baseline Level of Implementation</i>	19
<i>Enhanced Level of Implementation</i>	19
<i>Percent Reduction from Enhancements</i>	20
CR-4: REDUCTION OF TRASH FROM UNCOVERED LOADS	21
<i>Baseline Level of Implementation</i>	22
<i>Enhanced Level of Implementation</i>	21
<i>Percent Reduction from Enhancements</i>	22
CR-5: ANTI-LITTERING AND ILLEGAL DUMPING ENFORCEMENT ACTIVITIES	23
<i>Baseline Level of Implementation</i>	23
<i>Enhanced Level of Implementation</i>	23
<i>Percent Reduction from Enhancements</i>	23
CR-6: IMPROVED TRASH BIN/CONTAINER MANAGEMENT	25
<i>Baseline Level of Implementation</i>	25
<i>Enhanced Level of Implementation</i>	25
<i>Percent Reduction from Enhancements</i>	26

QF-1: ON-LAND TRASH CLEANUPS (VOLUNTEERS AND/OR MUNICIPAL).....	27
<i>Baseline Level of Implementation</i>	27
<i>Enhanced Level of Implementation</i>	27
<i>Percent Reduction from Enhancements</i>	28
QF-2: ENHANCED STREET SWEEPING	29
<i>Baseline Level of Implementation</i>	29
<i>Enhanced Level of Implementation</i>	29
<i>Percent Reduction from Enhancements</i>	29
QF-5: FULL-CAPTURE TREATMENT DEVICES	58
<i>Baseline Level of Implementation</i>	58
<i>Enhanced Level of Implementation</i>	58
<i>Percent Reduction from Enhancements</i>	58
QF-6: CREEK/CHANNEL/SHORELINE CLEANUPS	60
<i>Baseline Level of Implementation</i>	60
<i>Enhanced Level of Implementation</i>	60
<i>Percent Reduction from Enhancements</i>	60
5.0 SUMMARY OF TRASH CONTROL MEASURE ENHANCEMENTS	61
5.1 ANNUAL REPORTING AND PROGRESS TOWARDS TRASH LOAD REDUCTION GOAL(S)	64
5.2 CONSIDERATIONS OF UNCERTAINTIES.....	64
6.0 IMPLEMENTATION SCHEDULE	65
7.0 REFERENCES	67

LIST OF TABLES

TABLE 1.1 Trash control measures for which load reduction quantification credits or formulas were developed to track progress towards trash load reduction goals.....	5
Table 2.1 Regional Default Trash Generation Rates.....	6
Table 2.2 Jurisdictional areas and effective loading areas in the City of Pittsburgh by land use classes identified by ABAG (2005).....	7
Table 2.3: Preliminary annual trash baseline load for the City of Pittsburgh.....	9
Table 4.1 Trash control measures that will be implemented by the City of Pittsburgh to reach the 40% trash load reduction.....	14
Table QF-3-1. Planned enhanced street sweeping program in the City of Pittsburgh.....	30
Table QF-5-1. Trash full-capture treatment device within the jurisdictional boundaries of the City of Pittsburgh that is planned for installation by July 1, 2014.....	59
Table 5-1. Planned enhanced trash control measure implementation within the jurisdictional boundaries of the City of Pittsburgh and associated trash loads reduced.....	62

Table 6-1. Preliminary implementation schedule for enhanced trash control measures in the City of
Pittsburg.....66

LIST FIGURES

Figure 2.1: Estimated trash baseline loading rates for geographical areas in the City of Pittsburg.....10
Figure QF-3-1: Planned enhanced street sweeping program in the City of Pittsburg.....57

ABBREVIATIONS

BASMAA	Bay Area Stormwater Management Agencies Association
BID	Business Improvement District
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CASQA	California Stormwater Quality Association
CDS	Continuous Deflection Separator
CEQA	California Environmental Quality Act
CY	Cubic Yards
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
GIS	Geographic Information System
MRP	Municipal Regional Stormwater NPDES Permit
MS4	Municipal Separate Storm Sewer System
NGO	Non-Governmental Organization
NPDES	National Pollutant Discharge Elimination System
Q	Flow
SFRWQCB	San Francisco Regional Water Quality Control Board
SWRCB	State Water Resource Control Board
TMDL	Total Maximum Daily Load
USEPA	United States Environmental Protection Agency
Water Board	San Francisco Regional Water Quality Control Board
WDR	Waste Discharge Requirements

PREFACE

This Baseline Trash Load and Short-Term Trash Load Reduction Plan (Plan) is submitted in compliance with provision C.10.a(i) and C.10.a(ii) of the Municipal Regional Stormwater NPDES Permit (MRP) for Phase I communities in the San Francisco Bay (Order R2-2009-0074). This Plan was developed using a regionally consistent format developed by the Bay Area Stormwater Management Agencies Association (BASMAA). Based on new information that becomes available during the implementation of this Short-Term Plan (e.g., revisions to baseline loading estimates or load reduction credits of quantification formulas), the City of Pittsburg may chose to amend or revise this Plan. If revisions or amendments are necessary, a revised Short-Term Plan will be submitted to the Water Board via the City of Pittsburg's annual reporting process.

1.0 INTRODUCTION

The Municipal Regional Stormwater NPDES Permit for Phase I communities in the San Francisco Bay (Order R2-2009-0074), also known as the Municipal Regional Permit (MRP), became effective on December 1, 2009. The MRP applies to 76 large, medium and small municipalities (cities, towns and counties) and flood control agencies in the San Francisco Bay Region, collectively referred to as Permittees. Provision C.10 of the MRP (Trash Load Reduction) requires Permittees to reduce trash from their Municipal Separate Storm Sewer Systems (MS4s) by 40 percent before July 1, 2014.

Required submittals to the San Francisco Bay Regional Water Quality Control Board (Water Board) by February 1, 2012 under MRP provision C.10.a (Short-Term Trash Loading Reduction Plan) include:

1. (a) Baseline trash load estimate, and (b) description of the methodology used to determine the load level.
2. A description of the Trash Load Reduction Tracking Method that will be used to account for trash load reduction actions and to demonstrate progress and attainment of trash load reduction levels.
3. A **Short-Term Trash Loading Reduction Plan** that describes control measures and best management practices that will be implemented to attain a 40 percent trash load reduction from its MS4 by July 1, 2014;

This Short-Term Trash Load Reduction Plan (Short-Term Plan) is submitted by the City of Pittsburg in compliance with the portions of MRP provision C.10.a.i listed as 1a and 3 above. In compliance with 1b, BASMAA submitted a progress report on behalf of Permittees that briefly describes the methodologies used to develop trash baseline loads (BASMAA 2011a). These methods are more fully described in BASMAA (2011b, 2011c). Lastly, the *Trash Load Reduction Tracking Method Technical Report* (BASMAA 2011d) was submitted by BASMAA on behalf of Permittees in compliance with submittal 2 described above. The Baseline Loading Rates and Tracking Method projects are briefly described below.

Baseline Trash Generation Rates Project

Through approval of a BASMAA regional project, Permittees agreed to work collaboratively to develop a regionally consistent method to establish baseline trash loads from their MS4s. The project, also known as the *BASMAA Baseline Trash Generation Rates Project* assists Permittees in establishing a baseline to demonstrate progress towards MRP trash load reduction goals (i.e., 40 percent). The intent of the project was to provide a scientifically-sound method for developing (default) baseline trash generation rates that can be adjusted, based on Permittee/site specific conditions; and used to develop baseline loading rates and loads. Baseline loads form the reference point for comparing trash load reductions achieved through control measure implementation.

Baseline trash loading rates are quantified on a volume per unit area basis and based on factors that significantly affect trash generation (e.g., land use, population density, and economic profile). The method used to establish baseline trash loads for each Permittee builds off “lessons learned” from previous trash loading studies conducted in urban areas (Allison and Chiew 1995; Allison et al. 1998; Armitage et al. 1998; Armitage and Rooseboom 2000; Lippner et al. 2001; Armitage 2003; Kim et al. 2004; County of Los Angeles 2002, 2004a, 2004b; Armitage 2007). The method is based off a conceptual model developed as an outgrowth of these studies (BASMAA 2011b). Baseline trash loading rates were developed through the quantification and characterization of trash captured in Water Board recognized

full-capture treatment devices installed in the San Francisco Bay area. Methods used to develop trash baseline loading rates are more fully described in BASMAA (2011b, 2011c, and 2012).

Trash Load Reduction Tracking Method Summary

The trash load reduction tracking method, described in the *Trash Load Reduction Tracking Method Technical Report*, assists Permittees in demonstrating progress towards reaching trash load reduction goals defined in the MRP (e.g., 40 percent). The tracking method is based on information gained through an extensive literature review and Permittee experiences in implementing stormwater control measures in the San Francisco Bay Area. The literature review was conducted to evaluate quantification methods used by other agencies to assess control measure effectiveness or progress towards quantitative goals. Results are documented in the *Trash Load Reduction Tracking Method: Technical Memorandum # 1 – Literature Review* (BASMAA 2011d).

Methods attributable to specific trash control measures fall into two categories: 1) trash load reduction quantification formulas; and 2) load reduction credits (BASMAA 2011e). Quantification formulas were developed for those trash control measures that were deemed feasible and practical to quantify load reductions at this time. Load reduction credits were developed for all other control measures included in the methodology development. Both categories of methods assume that as new or enhanced trash control measures are implemented by Permittees, a commensurate trash load reduction will occur. Progress towards load reduction goals will be demonstrated through comparisons to established trash baseline load estimates developed through the BASMAA *Baseline Generation Rates Project*.

Short-Term Trash Load Reduction Plan

The purpose of this Short-Term Plan is to describe the current level of implementation of control measures and best management practices, and identify the type and extent to which new or enhanced control measures and best management practices will be implemented to attain a 40 percent trash load reduction from their MS4 by July 1, 2014. The Short-Term Plan was developed using a template created by BASMAA through a regional project. New and enhanced trash control measures (i.e., Best Management Practices) that Permittees may implement to demonstrate trash load reduction goals are included in Table 1.1. This list was developed collaboratively through the BASMAA Trash Committee, which included participation from Permittee, stormwater program, Water Board and non-governmental organization (NGO) staff. The list of control measures is based on: 1) the potential for Permittees to implement; 2) the availability of information required to populate formulas and develop credits; and 3) the expected benefit of implementation. Load reductions associated with each control measure are demonstrated either through a quantification formula (QF) or credits (CR) described in the *Trash Load Reduction Tracking Method Technical Report* (BASMAA 2011e).

In efforts to reduce trash discharged from MS4s, Permittees may choose to implement control measures that are not included in Table 1.1 or described more fully in BASMAA (2011e). If a Permittee chooses to do so, methods specific to calculating trash load reductions for that control measure would need to be developed. Additionally, at that point, consideration should be given to updating this Short-Term Plan.

Additionally, based on new information that becomes available during the implementation of this Short-Term Plan (e.g., revisions to baseline loading estimates or load reduction credits of quantification formulas), the City of Pittsburgh may amend or revise this Plan. If revisions or amendments are necessary,

a revised Short-Term Plan will be submitted to the Water Board via the City of Pittsburgh's annual reporting process.

Table 1.1. Trash control measures for which load reduction quantification credits or formulas were developed to track progress towards trash load reduction goals.

Load Reduction Credits
Single-use Carryout Plastic Bag Ordinances
Polystyrene Foam Food Service Ware Ordinances
Public Education and Outreach Programs
Activities to Reduce Trash from Uncovered Loads
Anti-Littering and Illegal Dumping Enforcement Activities
Improved Trash Bin/Container Management Activities
Single-Use Food and Beverage Ware Ordinances
Quantification Formulas
On-land Trash Pickup (Volunteer and/or Municipal)
Enhanced Street Sweeping
Partial-Capture Treatment Devices
Enhanced Storm Drain Inlet Maintenance
Full-Capture Treatment Devices
Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal)

This Short-Term Plan is organized into the following sections:

- Introduction;
- Trash Baseline Load Estimate;
- Load Reduction Calculation Process
- Planned Implementation of New or Enhanced Control Measures;
- Implementation Schedule; and
- References

2.0 BASELINE TRASH LOADING ESTIMATE

Note: Based on the results of a third monitoring event for the BASMAA Baseline Trash Generation Rates Project, this section will be updated with default trash generation rates and provided to Permittees. Tables and sections are therefore subject to change.

In compliance with Provision C.10.a.ii of the MRP, The City of Pittsburgh worked collaboratively with other MRP Permittees through BASMAA to develop data and the process necessary to establish baseline trash loading estimates to MS4s. The collaborative project was managed through the BASMAA Trash Committee and included a series of steps described in BASMAA (2012) and listed below. The approach was intended to be cost-effective and consistent, but still provide an adequate level of confidence in trash loads from municipal separate storm sewer systems (MS4s), while acknowledging that uncertainty in trash loads still exists.

- Step #1:** Conduct literature review
- Step #2:** Develop conceptual model
- Step #3:** Develop and implement sampling and analysis plan
- Step #4:** Test conceptual model
- Step #5:** Develop default trash generation rates
- Step #6:** Develop trash baseline loading rates by adjusting trash generation rates based on existing levels of control measure implementation
- Step #7:** Apply trash baseline loading rates and calculate baseline load

Through the collaborative BASMAA project, default baseline trash generation rates (volume per area) for wet and dry seasons were developed for a finite set of categories, based on factors that significantly affect trash loads (e.g., land use). These trash generation rates were then applied to applicable jurisdictional areas within the City of Pittsburgh. Trash generation rates were then adjusted based on baseline street sweeping and storm drain inlet maintenance conducted in each applicable area. The sum of the trash loads (i.e., rate multiplied by area) from each jurisdictional area represents the City of Pittsburgh's baseline trash load from its MS4. A full description of the methods by which trash baseline loads were developed is included in BASMAA

This section provides a summary of land use characteristics and demographics in the City of Pittsburgh that, based on the results of the BASMAA *Trash Generation Rates Project*, appear to affect trash generation rates. The process by which the City of Pittsburgh's trash baseline loading estimate was developed is also more fully described below.

Default Trash Generation Rates (Regional Approach)

A set of default trash generation rates for wet and dry seasons were developed via the BASMAA regional collaborative project (BASMAA 2012a). Default generation rates were developed based on a comparison between trash characterization monitoring results, land uses, economic profiles, and other factors that were believed to possibly affect trash generation. Three trash characterization monitoring events were scheduled via the *Trash Generation Rates Project*. Due to the compliance timeline in the MRP, only two of three trash characterization monitoring events were used to develop trash generation rates described

in BASMAA (2012a) and presented in this section. Following the completion of the third characterization event (Fall/Winter 2011), this section of the Plan will be updated to reflect the most up-to-date trash generation and loading rates available. Trash generation rates based on the results of two of the three characterization events are shown in Table 2-1 for each trash loading category.

Table 2.1: Regional Default Trash Generation Rates.

Land Use Category	Generation Rates (Gallons/acre/year)
High Density Residential	17.04
Low Density Residential	1.25
Rural Residential	0.17
Commercial and Services/ Heavy, Light and Other Industrial	7.08
Retail and Wholesale	29.99
K-12 Schools	13.14
Urban Parks	2.14

Permittee Characteristics

The jurisdictional area within the City of Pittsburg is 6,410 acres.

Pittsburg was established in 1839, as a result of a 10,000 acre land grant from the government of Mexico. The City's reputation as an industrial area was established in 1855 when coal was discovered in the southern hills, and its name was changed to Black Diamond. However, the prime industrial base of the City came in 1911 with the opening of the first steel mill, and the final name change to Pittsburg (after the hub of the steel industry on the east coast: Pittsburgh, Pennsylvania).

Pittsburg experienced rapid population growth during the 1970s and 1980s, evolving into a bedroom community for employment centers in west and central Contra Costa County. Population in the City's Sphere of Influence (SOI) grew 43 percent between 1985 and 1995, about 70 percent faster than Contra Costa County's already rapid growth rate. In the last five years, as development has extended to City limits, the pace of Pittsburg's growth has slowed, even as other east and central county cities such as Brentwood, Antioch, and Clayton continue their dramatic growth.

Many other changes have also occurred in the last decade. Extension of Bay Area Rapid Transit (BART) service to Bay Point has given Pittsburg a new transportation option. Redevelopment of the City's Downtown has provided residents with a more vital historic activity center and increased waterfront access. With limited availability of vacant land within City limits, major land use challenges include Downtown revitalization, infill development, fostering land use/transportation linkages, and appropriate hillside development.

According to the 2010 Census, Pittsburg has a population of 63,264, with a population density of 3,302.9 people per square mile, and average household size of 3.22. Of the 63,264 who call the City of Pittsburg home, 27.5% are under the age of 18, 10.8% are between 18 and 24, 29.0% are between 25 and 44, 24.2% are between 45 and 65, and 8.6% are 65 or older.

Top employers in the City of Pittsburg include Pittsburg Unified School District, USS-POSCO Industries, Los Medanos College, Dow Chemical Company, and the City of Pittsburg. The median household income was \$50,557 in 2000¹.

Land Use

Land uses within the City of Pittsburg depicted in ABAG (2005) are provided in Table 2-2. The City of Pittsburg is primarily comprised of 7 out of 7 ABAG classified land uses, High Density Residential, Low Density Residential, Rural Residential, Commercial and Services/ Heavy, Light and Other Industrial, retail and Wholesale, K-12 Schools, and Urban Parks.

Table 2.2: Jurisdictional areas and effective loading areas in the City of Pittsburg by land use classes identified by ABAG (2005).

Land Use Category	Jurisdictional Area (Acres)	Effective Loading Area (Acres)	% of Effective Loading Area
High Density Residential	1,061	958	20
Low Density Residential	2,387	2,327	49
Rural Residential	34	15	0
Commercial and Services/ Heavy, Light and Other Industrial	1,893	802	17
Retail and Wholesale	614	348	7
K-12 Schools	240	131	3
Urban Parks	182	140	3
TOTAL	6,410	4,721	100%

¹ From the 2000 Census. The median household income for the City of Pittsburg from the 2010 Census is not currently available.

Permittee-Specific Baseline Trash Loading Rates

PERMITTEE-SPECIFIC BASELINE TRASH LOADING RATES

Regional default trash generation rates developed through the BASMAA regional collaborative project were applied to effective loading areas within the City of Pittsburgh based on identified land uses. These generation rates were then adjusted based on the calculated effectiveness of baseline street sweeping, storm drain inlet maintenance and pump station maintenance implemented by the City. These adjustments were conducted in GIS due to the site specificity of baseline generation rates and baseline control measure implementation. The following sections describe the baseline level of implementation for these three control measures. A summary of trash baseline generation and loading rates for the City of Pittsburgh are provided in Table 2-3 and areas associated with these rates are illustrated in Figure 2-1.

Baseline Street Sweeping

A "baseline" street sweeping program is defined as the sweeping frequency and parking enforcement implemented by the City of Pittsburgh prior to effective date of the MRP. Baseline street sweeping differs from "enhanced" street sweeping, which includes increased parking enforcement and/or sweeping conducted at a frequency greater than baseline ceiling (i.e., once per week for retail land uses and twice per month for all other land uses). The baseline ceiling was created to not penalize implementers of enhanced street sweeping programs prior to the effective date of the MRP. For those Permittees that sweep less frequent than the baseline ceiling, their current sweeping frequency serves as their baseline.

The City of Pittsburgh's baseline street sweeping program includes sweeping most residential and arterial streets twice per month, and most streets in the downtown areas once per week. The City's current street sweeping program includes sweeping most streets in residential areas twice per month, and sweeping downtown and arterial roads once or twice per week.

Parking enforcement signs for street sweeping are posted in the downtown and near the high school. There is no additional parking enforcement equivalent within the City. The estimated trash load reduced via baseline street sweeping is presented in Table 2-3.

Baseline Storm Drain Inlet Maintenance

Within the City, storm drain inlets were cleaned at a baseline level of one time per year prior to the effective date of the MRP. Based on this baseline frequency and the effectiveness rating developed in BASMAA (2012b), the baseline storm drain maintenance program in the City of Pittsburgh has an annual effectiveness rating of 5%. The estimated trash load reduced via baseline storm drain inlet maintenance is presented in Table 2-3.

Baseline Stormwater Pump Station Maintenance

The City of Pittsburgh owns and maintains eight stormwater pump stations. Of these stations, one has a trash rack that captures trash and allows for removal during maintenance. The estimated volume of trash removed annually from this pump station prior to the effective date of the MRP is considered the baseline level of implementation. To determine the baseline volume of trash removed from pump stations, an effectiveness rating of 25% removal of the baseline trash load attributable to the area draining to the pump station is assumed. This effectiveness rating is based on methods developed in

BASMAA (2012b). The estimated trash load reduced via baseline pump station maintenance is presented in Table 2-3.

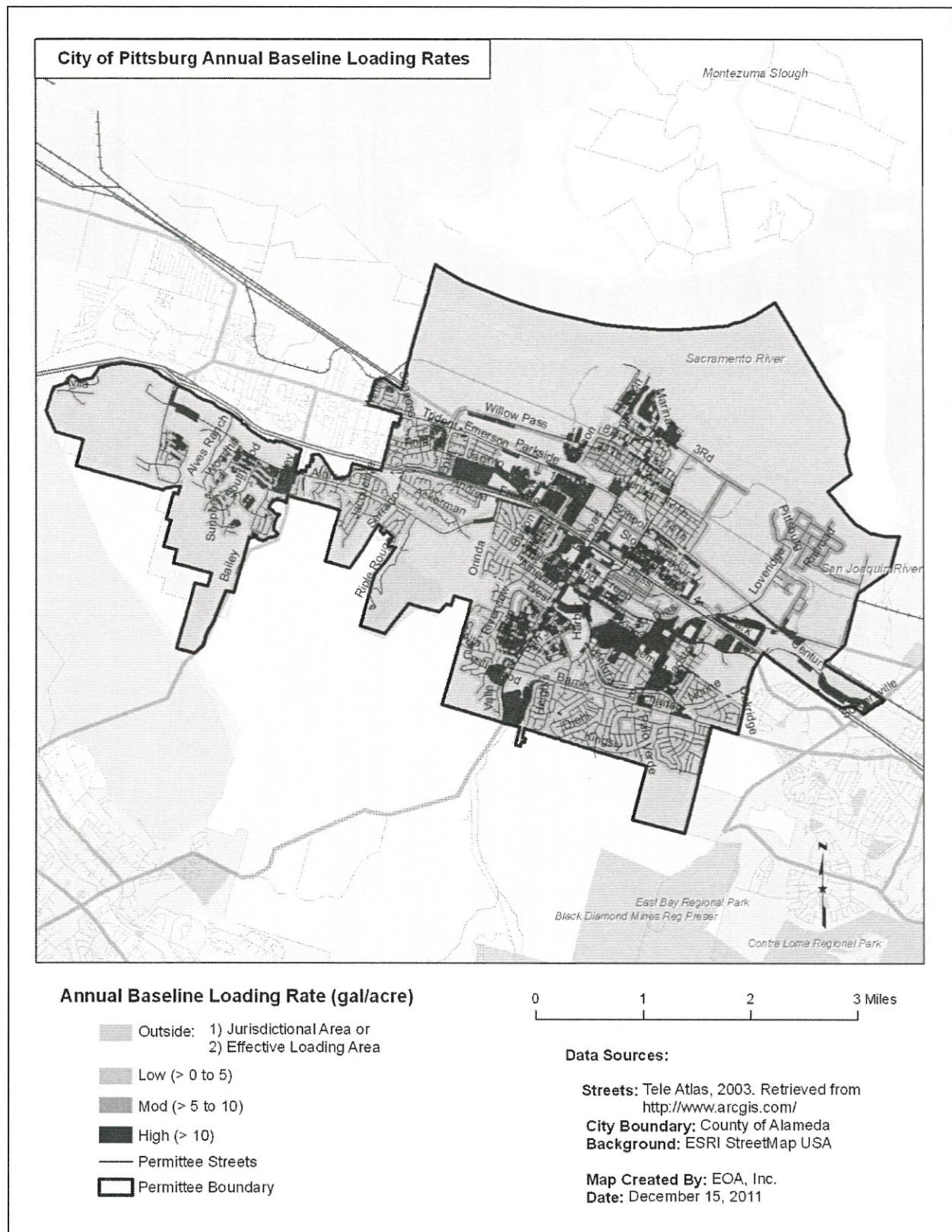
BASELINE TRASH LOADING ESTIMATE

The estimated baseline trash load from the City of Pittsburg was calculated as the sum of the loads from the City's effective loading area, adjusted for baseline implementation of street sweeping, storm drain inlet maintenance, and pump station maintenance. The preliminary annual trash baseline load for the City of Pittsburg is presented in Table 2-3. Preliminary baseline trash loading rates are presented in Figure 2-1 to provide a geographical illustration of areas with estimated low, moderate, high and very high trash loading rates.

Table 2.3: Preliminary annual trash baseline load for the City of Pittsburg.

Category	Annual Load (gallons)
Preliminary Generation Trash Load	37,354
Load Removed via Baseline Street Sweeping	8,938
Load Removed via Baseline Storm Drain Inlet Maintenance	1,421
Load Removed via Baseline Stormwater Pump Station Maintenance	64
Preliminary Trash Baseline Load	26,931

Figure 2.1: Estimated trash baseline loading rates for geographical areas in the City of Pittsburg



3.0 LOAD REDUCTION CALCULATION PROCESS

Using the guiding principles and assumptions described BASMAA (2011e), a stepwise process for calculating trash load reductions was developed collaboratively through BASMAA. This process is fully described in Trash Load Reduction Tracking Method Technical Report (BASMAA 2011e) and is briefly summarized in this section. The process takes into at what point in the trash generation and transport process a trash control measure: 1) prevents trash generation, 2) intercepts trash in the environment prior to reaching a water body, or 3) removes trash that has reached a water body. In doing so, it avoids double-counting of trash load reductions associated with specific control measures.

To demonstrate trash load reductions, baseline trash loading rates will be adjusted using the following process:

- Step #1:** Existing Enhanced Street Sweeping
- Step#2:** Trash Generation Reduction
- Step #3:** On-land Interception
- Step #4:** Trash Interception in the Stormwater Conveyance System
- Step #5:** Trash Interception in Waterways
- Step #6:** Comparison to Baseline Trash Load

Reductions calculated in Steps 2 and 5 are assumed to be implemented at a constant rate on an “area-wide” basis. For example, if a new region-wide public education strategy is implemented within the San Francisco Bay area, all Permittees can apply load reduction credits associated with this control measure. In contrast, Steps 1, 3 and 4 are “area-specific” reductions that only apply to specific areas within a Permittee’s jurisdiction. Area-specific control measures include full-capture treatment devices and enhanced street sweeping. Area-specific reductions may require the use of a Geographic Information System (GIS) to calculate.

Reductions are generally applied in the sequence as presented in Figure 2-1 and described below, although some reductions may be applied “in-parallel” and calculated during the same sub-step in the process.

Step #1: Existing Enhanced Street Sweeping

Trash load reductions due to existing enhanced street sweeping implemented prior to the effective date of the MRP and conducted at levels above baseline levels are not incorporated into each Permittee’s trash baseline load. Therefore, load reductions associated with existing enhancements are accounted for first in the trash load reduction calculation process. Existing enhanced street sweeping includes street sweeping conducted at a frequency greater than **1x/week** for streets within retail land use areas or greater than **2x/month** for streets in all other land use areas. The result of adjustments made to trash baseline loads due to the implementation of existing enhanced street sweeping is a set of **current baseline loading rates** and a **current baseline load**.

Step #2: Trash Generation Reduction Control Measures

Trash generation reduction control measures prevent or greatly reduce the likelihood of trash from being deposited onto the urban landscape. They include the following area-wide control measures:

- CR-1: Single-Use Carryout Plastic Bag Ordinances
- CR-2: Polystyrene Foam Food Service Ware Ordinances
- CR-3: Public Education and Outreach Programs
- CR-4: Reduction of Trash from Uncovered Loads
- CR-5: Anti-Littering and Illegal Dumping Enforcement
- CR-6: Improved Trash Bin/Container Management
- CR-7: Single-Use Food and Beverage Ware Ordinances

Load reductions associated with trash generation reduction control measures are applied on an area-wide basis.² Therefore, reductions in current baseline loading rates are adjusted uniformly based on the implementation of the control measure and the associated credit claimed.

Baseline loading rate adjustments for all generation reduction controls measures implemented may be applied in-parallel, but should be applied prior to calculating on-land interception measures discussed in Step #3. The result of adjustments to trash baseline loading rates due to the implementation of these enhanced control measures will be a set of **street loading rates**. The **street load** is the volume of trash estimated to enter the environment and available for transport to the MS4 if not intercepted via on-land control measures described in Step #2.

Step #3: On-land Interception Control Measures

Once trash enters the environment, it may be intercepted and removed through the following control measures prior to reaching the stormwater conveyance system:

- QF-1: On-land Trash Cleanups (Volunteer and/or Municipal) (Area-wide)
- QF-2: Enhanced Street Sweeping (Area-specific)

Since on-land trash cleanups can affect the amount of trash available to street sweepers, load reductions associated with their implementation will be quantified first, followed by street sweeping enhancements. On-land trash cleanups will be applied as an area-wide reduction and all effective loading rates will be adjusted equally. Enhanced street sweeping, however, is an area-specific control measure and only those effective loading rates associated with areas receiving enhancements will be adjusted. Due to the spatial nature of enhanced street sweeping, GIS may be needed to conduct this step.

The result of adjustments to effective loading rates due to the implementation of these enhanced control measures will be a set of **conveyance system loading rates**. The **conveyance load** is the volume of trash estimated to enter the stormwater conveyance system (e.g., storm drains).

² The only exception to this statement are load reductions associated with the establishment of Business Improvement Districts (BIDs) or equivalent, which are specific to geographic areas and considered "area-specific".

Step #4: Control Measures that Intercept Trash in the MS4

Control measures that intercept trash in the stormwater conveyance system are area-specific. Therefore, they only apply to land areas and associated trash loads reduced. Conveyance system loading rates developed as a result of Step #3 should be adjusted in-parallel for the following control measures:

- QF-3a: Partial-capture Treatment Device: Curb Inlet Screens (Area-specific)
- QF-3b: Partial-capture Treatment Device: Stormwater Pump Station Trash Racks Enhancements (Area-specific)
- QF-4: Enhanced Storm Drain Inlet Maintenance (Area-specific)
- QF-5: Full-Capture Treatment Devices (Area-specific)

Load reductions for these control measures are calculated in-parallel because they are applied to independent geographical areas. Reductions from all control measures described in this step are area-specific and may require the use of GIS to calculate a set of **waterway loading rates**. Once waterway loading rates have been determined, a **waterway load** will be developed and used as a starting point for calculating load reductions associated with trash interception in waterways discussed in Step #5.

Step #5: Control Measures that Intercept Trash in Waterways

The load of trash that passes through the stormwater conveyance system without being intercepted may still be removed through interception in waterways. There are two control measures associated with interception in waterways:

- QF-3c: Partial-capture Treatment Device: Litter Booms/Curtains (Area-wide)
- QF-7: Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal) (Area-wide)

As these control measures are implemented, load reduction estimates can be calculated in-parallel for these two measures.

Step #6: Comparison to Baseline Trash Load

Applying the four steps described in the processes above will provide an estimated trash load (volume) remaining after trash control measures are implemented. As depicted in the following equation, the relative percent difference between the baseline load and the load remaining after control measures are implemented is the percent reduction that will be used to assess progress towards MRP trash load reduction goals.

$$\frac{\text{Baseline Load} - \text{Remaining Load}}{\text{Baseline Load}} = \% \text{ Reduction}$$

4.0 ENHANCED TRASH CONTROL MEASURES

This section describes the new or enhanced trash control measures planned for implementation by the City of Pittsburgh. The enhanced control measures described are designed to reach a 40% reduction by July 1, 2014. New and enhanced control measures that will be implemented by the City of Pittsburgh include those listed in Table 4.1.

Table 4.1 Trash control measures that will be implemented by the City of Pittsburgh to reach the 40% trash load reduction.

Control Measures
SINGLE USE-CARRYOUT PLASTIC BAG ORDINANCE
POLYSTYRENE FOAM FOOD SERVICE WARE ORDINANCES
PUBLIC EDUCATION AND OUTREACH PROGRAMS
ACTIVITIES TO REDUCE TRASH FROM UNCOVERED LOADS
ANTI-LITTERING AND ILLEGAL DUMPING ENFORCEMENT ACTIVITIES
IMPROVED TRASH BIN / CONTAINER MANAGEMENT ACTIVITIES
ON-LAND TRASH CLEANUPS (VOLUNTEER AND/OR MUNICIPAL)
PARTIAL-CAPTURE TREATMENT DEVICES
ENHANCED STORM DRAIN INLET MAINTENANCE
FULL-CAPTURE TREATMENT DEVICES
CREEK / CHANNEL/ SHORELINE CLEANUPS (VOLUNTEER AND/OR MUNICIPAL)

CR-1: Single-use Carryout Plastic Bag Policy

Single-use plastic carryout bags have been found to contribute substantially to the litter stream and to have adverse effects on marine wildlife (United Nations 2009, CIWMB 2007, County of Los Angeles 2007). The prevalence of litter from plastic bags in the urban environment also compromises the efficiency of systems designed to channel storm water runoff. Furthermore, plastic bag litter leads to increased clean-up costs for the Permittees and other public agencies.

Based on recent experiences of municipalities throughout the State, the process Permittees must go through to enact a single-use carryout plastic bag policy/ordinance is difficult due to intense scrutiny and opposition from not only public interest groups and lobbyists, but also merchants and community members. In most cases, most opposition groups are pressing for the development of Environmental Impact Reports (EIRs) in accordance with the California Environmental Quality Act (CEQA).

Baseline Level of Implementation

Prior to adoption of the MRP, Permittees within the Bay area have enacted policies or ordinances on Single-use Carryout Plastic Bags. To avoid penalizing these early implementers, an applicable control measure implemented by a Permittee prior to the effective date of the MRP will be credited equally to a control measure implemented after the effective date. Therefore, the baseline level of implementation is not applicable for this control measure.

Enhanced Level of Implementation

In an effort to promote the use of reusable bags, the Contra Costa County Clean Water Program (Clean Water Program) has produced a Model Ordinance addressing the use of single-use carryout plastic bags and recyclable paper bags. The Ordinance has not yet been adopted as of the date of submittal of this Short Term Trash Load Reduction Plan, but is planned to be adopted in 2012 and will be operative six (6) months after adoption by the Clean Water Program and the City of Pittsburg.

The ordinance will apply to all commercial establishments that sell perishable and non perishable goods including, but not limited to clothing, food, and personal items directly to the customer. The ordinance applies to bags provided for the purpose of carrying away goods from the point of sale and does not apply to produce bags or product bags. Retailers will be required to charge a fee for providing a customer with recyclable paper bags at the point of sale, \$0.10 in the first year of adoption, \$0.15 per bag the year after, and \$0.25 per bag two years after adoption. The ordinance exempts public eating establishments and nonprofit charitable organizations. In addition, the following customers are exempt from the fee at the point of sale: customers that are participate in either the California Special Supplemental Food program for Women, Infants, and Children pursuant to Article 2 of Chapter 1 of Part 2 of Division 106 of the Health and Safety Code or in the Supplemental Food Program pursuant to Chapter 10 of Part 3 of Division 9 of the Welfare and Institutions Code, the State Department of Social Services Food Stamp Program, or other government subsidized purchase programs for low income residents. Retail establishments must provide these customers with reusable bags or recycled paper carryout bags, or both. All retail establishments must report to the City Manager, on an annual basis, the total number of recycled paper carryout bags, the total amount of monies collected for providing recycled paper carryout bags, and summary of any efforts the retail establishment has undertaken to promote the use of reusable bags by customers in the prior year. The City

Manager and/or his designee have the responsibility for enforcing the ordinance, and will have the authority to take any and all actions reasonable and necessary to enforce the ordinance, including, but not limited to, investigating violations, issuing fines and entering the premises of any retail establishment during business hours.

The City of Pittsburgh plans to adopt the Clean Water Program's Model ordinance, and phase in the implementation for all retailers. The initial phase will involve the implementation of Tier 1, prohibiting the distribution of single-use carryout plastic bags at large Supermarkets. Tiers 2 and 3, which includes prohibition of plastic bag distribution at Retail Establishments that sell packaged food and all retail establishments (except restaurants) is planned to be phased in by the second year after adoption. This will enable the public and small retail establishments to seek other bag / container options. The City intends to provide more outreach and education to the public to prepare them for the ordinance implementation.

The total percent trash reduced from MS4s as a result of implementing a single-use carryout plastic bag ordinance will be reported in the Annual Report submitted each September to the Water Board.

Reduction from Implementing Control Measure

The City of Pittsburgh will receive a ten (10%) percent reduction credit for implementing specific enhanced control measures described in Enhanced Level of Implementation section above. The 10 percent reduction credit will be applied to the City of Pittsburgh's baseline trash load. This percent reduction credit is consistent with methods presented in the BASMAA (2011e). A summary of all load reductions anticipated through the implementation of this plan are included in Section 4.0.

CR-2: Polystyrene Foam Food Service Ware Policy

Polystyrene foam is used as food ware in the food service industry. According to the USEPA, floatable debris in waterways, such as products made of polystyrene, is persistent in the environment and has physical properties that can have serious impacts on human health, wildlife, the aquatic environment and the economy (USEPA 2002). Due to its properties, polystyrene foam used as food ware is typically not recycled. Since 1990, over 100 government agencies within the United States, including over twenty within the Bay area have enacted full or partial bans on polystyrene foam food service ware.

Baseline Level of Implementation

Prior to adoption of the MRP, over twenty agencies within the Bay area enacted full or partial bans on polystyrene foam food service ware. To avoid penalizing these early implementers, an applicable control measure implemented by a Permittee prior to the effective date of the MRP will be credited equally to a control measure implemented after the effective date. Therefore, the baseline level of implementation is not applicable for this control measure.

Enhanced Level of Implementation

The City of Pittsburg currently has an ordinance banning polystyrene foam food service ware at the point-of-sale. On November 4, 1991, the City Council adopted Resolution 1019, which amended the Pittsburg Municipal Code to address recyclable waste materials for both residential and non-residential establishments, and Food Packaging Recycling. Section 8.06.210 of Article IV. Food Packaging Recycling, prohibits retail food establishments from purchasing, obtaining, keeping, selling, or distributing any polystyrene CFC-processed take-out food packaging. The Ordinance became effective on December 4, 1991. Retail food establishments were given until January 1, 1993 to become fully compliant with the ordinance.

Percent Reduction from Enhancements

The ordinance also requires that restaurant and food service businesses provide proof of compliance with this ordinance; since its adoption, there has been little to no effort in managing the verification of this information. Therefore the City will begin requiring that these businesses provide proof of compliance by requiring a form be submitted with their Business License renewal application. A database will be created to track which of the businesses are in compliance, and random yearly inspections will be conducted to ensure the information provided by the owners are true and correct. In addition, the City intends to modify the existing ordinance to clarify that the food ware ban is applicable to all polystyrene foam food containers, and not just those CFC-processed materials, and also prohibit these materials from being distributed at all City sponsored events, and events held on City property. With these proposed clarifications to the existing City ordinance, and implementing enforcement of the ordinance, the City intends to meet the requirements of Tier 1 – Prohibit the distribution of polystyrene foam single-use food and beverage ware at Permittee-sponsored events or on Permittee-owned property, and Tier 2 – prohibit the distribution of polystyrene foam single-use food and beverage ware at all food service vendors.

The City of Pittsburgh will receive an 8 percent reduction credit for implementing specific enhanced control measures described in *Enhanced Level of Implementation* section. The 8 percent reduction credit will be applied to the City of Pittsburgh's baseline trash load. This percent reduction credit is consistent with methods presented in the BASMAA (2011e). A summary of all load reductions anticipated through the implementation of this plan are included in section 4.0.

CR-3: Public Education and Outreach Programs

Permittees in the San Francisco Bay Area have implemented public education and outreach programs to inform residents about stormwater issues relating to pollutants of concern, watershed awareness and pollution prevention. Public education and outreach efforts include developing and distributing brochures and other print media; posting messages on websites and social networking media (Facebook, Twitter etc.), attending community outreach events, and conducting media advertising. In recent years, some municipal agencies have implemented anti-litter campaigns to increase public awareness about the impacts of litter on their communities and water quality; and to encourage the public to stop littering.

Baseline Level of Implementation

The City of Pittsburg implemented the following public education and outreach control measures prior to the effective date of the MRP:

- The City's Neighborhood Improvement Team, created an anti-litter program to compliment the illegal dumping program and Keep California Beautiful campaign as well as support awareness for a major NPDES pollutant of concern – litter. The "Don't Trash Pittsburg! Pick-up Litter ~ Recycle bottles, cans, plastic and paper!"
- Banners promoting "Don't Litter" were created and are posted at all City parks
- The City installed surveillance cameras with a voice over message to violators that photographs of them dumping at the site were just taken.
- Monetary rewards were given to persons that reported illegal dumping events which led to prosecution of individuals.

These activities were not continued after 2009 due to budget cuts that dissolved the Neighborhood Improvement team, which was the primary group that managed these projects.

Enhanced Level of Implementation

The City of Pittsburg will implement the following public education and outreach control measures prior to July 1, 2014:

Implementation of Advertising campaign will be accomplished by:

- Participation in the Clean Water Program's countywide "Litter Travels" campaign

Outreach to School Age Children will be accomplished by means of the following activities:

- Providing key speakers at our local public library to give a presentation about the watershed and effects of litter
- Hosting our yearly Green Footprint Festival, which is a festival for families with kid-friendly activities and booths that provides information about the watershed, recycling, and litter reduction
- Sponsoring educational programs such as Kids for the Bay at our local schools
- Providing educational field trips in conjunction with the Partners for the Watershed group

Media relations efforts will be accomplished by:

- Use of our City web site and newsletter to promote anti-litter messages and advertisement for community clean up events such as the Great Pittsburgh Clean Up and Adopt a Spot Programs
- Use of our facebook pages and twitter account to promote upcoming events and anti-litter messages.

Community Outreach Events will consist of:

- Launching our Adopt a Spot Program for businesses and private residents
- Providing anti-litter informational displays at our public library
- Hosting additional creek clean up events

Percent Reduction from Enhancements

The City of Pittsburgh will receive an 8 percent reduction credit for implementing specific enhanced control measures described in *Enhanced Level of Implementation* section above. The 8 percent reduction credit will be applied to the City of Pittsburgh's baseline trash load. This percent reduction credit is consistent with methods presented in the BASMAA (2011e). A summary of all load reductions anticipated through the implementation of this plan are included in Section 4.0.

CR-4: Reduction of Trash from Uncovered Loads

Although it is currently illegal to operate a vehicle that is improperly covered and which its' contents escapes³, vehicles remain an important trash source to MS4s and local waterways. Specifically, vehicles that do not secure or cover their loads when transporting trash and debris have a high risk of contributing trash to MS4s. Land areas that generate trash from vehicles include roads, highways (on/off ramps, shoulders or median strips) and parking lots. To help address the dispersion of trash from unsecured or uncovered vehicles destined for landfills and transfer stations, Permittees may require municipally-contracted trash haulers to cover or secure loads or work with municipal or private landfill and transfer station operators to educate waste haulers on securing loads and/or to enhance enforcement of existing regulations.

Baseline Level of Implementation

Baseline level of Implementation

The baseline trash load described in Section 2.0, assumes that prior to adoption of the MRP the City of Pittsburgh has not adopted control measures to reduce trash from vehicles with uncovered loads. Therefore, implementation of any of the control measures described in this section is considered to be enhanced implementation.

Enhanced Level of Implementation

The City of Pittsburgh will implement the following enhanced control measures to reduce trash from vehicles with uncovered loads prior to July 1, 2014.

On November 5, 1990, the City Council of the City of Pittsburgh adopted Ordinance 90-997, revising the existing Garbage ordinance (Chapter 8.04), addressing vehicles used to transport refuse. The ordinance requires that all vehicles used for hauling refuse within the City shall be of such construction as to comply with all laws, rules, and regulations of the state, and shall be of a type and construction to prevent leakage or overflow. All refuse in such vehicle shall be completely covered when in route from the last collection station to the disposal area to prevent any refuse from spilling or blowing from the vehicle. To meet the enhanced level of implementation, the City intends to:

- 1) Work with our local transfer station to include language in our hauling service contract(s) that requires contracted trash and construction debris haulers to cover loads when transporting trash and debris to municipally or privately-owned landfills and transfer stations. The City intends to enlist the help of the transfer station and landfill in educating/reminding the public to cover their loads of debris when they transport to the transfer station, or face a fine issued by City Code Enforcement.
- 2) The City will condition all demolition and grading permits issued within the City to provide appropriately cover their loads when transporting to the landfill or transfer station.

³ In accordance with the California Vehicle Code Sections 23114 and 23115, it is against the law to operate a vehicle on the highway which is improperly covered, constructed, or loaded so that any part of its contents or loads spills, drops, leaks, blows, or otherwise escapes from the vehicle. Exempted materials include hay and straw, clear water and feathers from live birds. Additionally, any vehicle transporting garbage, trash, or rubbish, used cans or bottles, waste papers, waste cardboard, etc. must have the load covered to prevent any part of the load from spilling on the highway (CVC 2011). Significant fines are possible for non-compliance.

- 3) The City will implement citations for those haulers caught with improperly covered loads.

Percent Reduction from Enhancements

The City of Pittsburgh will receive a 5 percent reduction credit for implementing specific enhanced control measures described in Description of Enhanced level of Implementation section above. The five percent reduction credit will be applied to the baseline trash load to urban creeks from municipal separate storm sewer system (MS4) owned and operated by the City of Pittsburgh.

CR-5: Anti-Littering and Illegal Dumping Enforcement Activities

Successful anti-littering and illegal dumping enforcement activities include laws or ordinances that make littering or dumping of trash illegal. Laws are enforced by various municipal agency staff (e.g., police, sheriff and public works department staff) who issue citations in response to citizen complaints or other enforcement methods (e.g., surveillance cameras, signage and/or physical barriers installed at illegal dumping hot spots). In some California jurisdictions, the minimum fine for littering is \$500 and the maximum penalty for highway littering is \$1000 (City of San Francisco 2001). However, it is difficult to enforce small littering events unless they are witnessed or solid proof exists linking the offender to the litter. As a result, enforcement tends to focus on larger scale illegal dumping activities.

Baseline Level of Implementation

The baseline trash load described in Section 2.0, assumes that the City of Pittsburg has adopted a basic anti-littering and illegal dumping enforcement program that entails receiving and responding to complaints from citizens as resources allow. Prior to adoption of the MRP, the City conducted its anti-littering outreach efforts through the City's website and Neighborhood Improvement Team. The Neighborhood Improvement Team financed the installation of several cameras installed at hot spot dumping locations and signage with illegal dumping and fine warnings added to locations where funding was not available for cameras. In addition, residents were encouraged to call and report dumping activities and were offered a \$250 reward for the report and conviction of individuals caught in the act of illegal dumping. Under the City's Municipal Code, administrative fines can be issued for illegal dumping under the Public Nuisance Code for a cost not to exceed: \$100 for the first violation, \$200 for the second violation of the same Ordinance in 12 months, and \$500 for each additional violation of the same Ordinance in 12 months.

Enhanced Level of Implementation

In 2010, budget cuts to the Neighborhood Improvement Team no longer allowed for staffing dedicated to investigating illegal dumping and surveillance. In addition, several of the cameras have been vandalized; out of the 11 cameras installed in 2008, only 3 remain functional. The lack of funds has prevented them from being replaced. The City of Pittsburg Public Works Department addresses dumping complaints received from the public, and conducts clean up as complaints are received, or as Public Works staff encounters them in course of their other day to day field duties. The City of Pittsburg will implement the following enhanced anti-littering and illegal dumping enforcement control measures prior to July 1, 2014.

The City intends to enhance our Anti-Littering and Illegal Dumping Enforcement Program by increasing the efforts put forth by our Public Works Staff to investigate complaints received from the illegal dumping hotline and enlist help from Code Enforcement to issue citations as warranted, and to collect evidence from illegal dump sites in an attempt to identify offenders. Replacement / installation of new cameras at hot spot priority sites, and installation of fences at remote areas prone to or have the potential of becoming dumping sites.

Percent Reduction from Enhancements

The City of Pittsburg will receive a 4 percent reduction credit for implementing specific enhanced control measures described in *Description of Enhanced Level of Implementation*

section above. The 4 percent reduction credit will be applied to the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of Pittsburgh. This percent reduction credit was obtained from the *Trash Load Reduction Tracking Method Report* (BASMAA 2011e) and is presented in the Trash Load Reduction Summary Table included in Section 4.

CR-6: Improved Trash Bin/Container Management

Receptacles used to place/store trash or recyclables prior to collection by a public agency or private waste hauler reduce the potential for littering and trash loading to stormwater conveyance systems and receiving waters (City of Los Angeles 2004). For the purposes of assigning trash load reduction credits, receptacles fall into the following two categories:

- **Private Trash/Recycling Bins:** A receptacle for placing trash or recyclables generated from a household, business, or other location that is serviced by a trash hauler. Bins are specifically-designed, heavy-duty plastic wheeled containers with hinged lids; or large multi-yard metal or plastic containers rectangular in shape.
- **Public Area Trash Containers:** A receptacle for placing incidental trash generated in public spaces that provides people with a convenient and appropriate place to dispose of trash. The design and size of public area trash containers vary widely, depending on their setting and use.

The effectiveness of bins/containers and bins in reducing trash in the environment is likely dependent upon: the location and density of the receptacles, size of the bin/container in relationship to the size needed to service users, frequency of maintenance, and the ability of the bin/container to capture and contain the trash deposited.

Baseline Level of Implementation

The baseline trash load described in Section 2.0, assumes that the City of Pittsburg has not implemented enhanced trash bin/container management practices prior to effective date of the MRP. The City has an existing ordinance that outlines a mandatory refuse collection procedure for the periodic collection and disposal of all refuse and waste materials that accumulate within the City. Standard refuse containers and the maintenance procedures for these containers are specified. In addition the ordinance mandates that all property owners engage in the contracting for refuse collection by the City's refuse franchise collector.

Enhanced Level of Implementation

The City of Pittsburg will implement the following improved trash bin/container management practices **prior to July 1, 2014:**

- The City plans to establish a program to track and enforce the provisions of the Refuse Removal and Disposal ordinance. The City intends to coordinate with Pittsburg Disposal in helping to identify those property owners that are not in compliant the City ordinance.
- The City will re-evaluate the placement of trash and recycling receptacles in public areas. A trash compactor will be installed in a very dense redevelopment commercial area
- New specialty recycling bins will be installed at the Pittsburg Marina for recycle of fishing hooks and lines, and containers to receive used oil, oil filters, and batteries
- The City plans to work with the downtown commercial businesses to form a Business Improvement District in conjunction with our Adopt a Spot campaign.

Percent Reduction from Enhancements

The City of Pittsburgh will receive an 8.7 percent reduction credit for implementing specific enhanced control measures described in *Description of Enhanced Level of Implementation* section above. The 8.7 percent reduction credit will be applied to the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of Pittsburgh. This percent reduction credit was obtained from the *Trash Load Reduction Tracking Method Report* (BASMAA 2011e) and is presented in the Trash Load Reduction Summary Table included in Section 4.

QF-1: Enhanced On-Land Trash Cleanups (Volunteers and/or Municipal)

On-land cleanups conducted by Permittees and volunteers have been successful in removing trash from identified trash hot spots and engaging local citizenry in improving their communities. Permittees have several programs in place to address on-land trash. Municipal efforts relate to ongoing beautification of impacted areas and coordination of cleanup events. Volunteer on-land cleanups involve the meeting of individuals, creek and watershed groups, civic organizations, businesses and others at designated or adopted on-land sites to remove trash. On-land trash cleanups are conducted as single-day or throughout the year.

Baseline Level of Implementation

Prior to the effective date of the MRP, the City's Neighborhood Improvement Team established an informal Adopt a Spot Program focused on engaging volunteers to help maintain parks, creeks, drains, streets, and trails and assist with painting equipment and buildings within the City. In the past, only two groups of volunteers have been consistent with their cleanup efforts. These control measures are considered baseline because they were accounted for in the preliminary trash generation rates established through the BASMAA *Baseline Trash Loading Rates Project*. New or enhanced actions that began or are planned to begin after the effective date of the MRP are described under the next section.

Enhanced Level of Implementation

The City of Pittsburg intends to implement an enhanced coordinated litter pick up program. Prior to July 1, 2014, the City of Pittsburg will revive and establish a formalized Adopt a Spot Program, with special emphasis on litter removal. The new program will require a minimum activity commitment by organizations or individuals, an approval process for the proposed locations to be adopted, and reporting criteria. The City will provide cleanup and safety materials, and recognize these organizations on the City web site, and with courtesy signs. These on-land cleanups will be conducted or coordinated each year and the volume of trash removed will be tracked to demonstrate trash loads reduced.

The City will also continue to remove homeless encampments. The City will begin documentation of the debris removed from these encampments, and track the activity of these groups.

Enhancement of routine cleanups of hot spot areas will be accomplished using the work force provided by Work Alternative volunteers.

Please note that **only trash that has the potential of entering the MS4 will be tracked**. As a result, large items (e.g., appliances, shopping carts, furniture, mattresses, televisions, tires, lumber, etc.) that will be removed during on-land trash cleanups are not part of the volume determination since they do not have the potential of entering the MS4.

Percent Reduction from Enhancements

The total estimated annual volume of trash that will be reduced beginning July 1, 2014 as a result of implementing on-land trash cleanups is 53 cubic feet. This volume is equal to approximately a 1.26 percent reduction in the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of Pittsburgh. Both values provided within this section are included in Trash Load Reduction Summary Table included in Section 4.

QF-2: Enhanced Street Sweeping

Street sweeping is conducted by most, if not all, Bay Area municipalities to remove trash and debris that collect in the gutters at the edge of streets. Parked cars and large storms that produce significant runoff can impact the effectiveness of street sweepers. However, increasing parking enforcement or more frequent street sweeping (as compared to the frequency of storm events) may increase the trash load reduced to MS4s. Permittees who choose to enhance street sweeping may do so to demonstrate trash load reductions to their MS4s and progress towards trash load reduction goals required by the MRP.

Baseline Level of Implementation

The baseline trash load described in Section 2.0 incorporates the trash load reductions due to baseline street sweeping. The baseline street sweeping program includes sweeping at a frequency of once per week times in retail areas and twice per month times per month on average in all other areas.

The City of Pittsburg also implements a parking enforcement program that cites vehicles parked in "No Parking" signed areas twice per month.

Enhanced Level of Implementation

The City of Pittsburg implements enhanced street sweeping activities by sweeping retail areas twice per week.

Percent Reduction from Enhancements

The total estimated annual volume of trash that will be reduced by July 1, 2014 as a result of enhanced street sweeping is 581 cubic feet. As described in Trash Load Reduction Summary Table included in Section 4, this volume is equal to approximately a 3.5 percent reduction in the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of Pittsburg.

Table QF-3-1. Planned enhanced street sweeping program in the City of Pittsburgh

ROUTE ID	APPROXIMATE LENGTH SWEPT	BASELINE		ENHANCED	
		CURB MILES	FREQUENCY	PARKING ENFORCEMENT	FREQUENCY
Adobe Place	0.2	2X/MONTH		2X/MONTH	
Alamo Court	0.2	2X/MONTH		2X/MONTH	
Alamo Way	0.4	2X/MONTH		2X/MONTH	
Alderbrook Place	0.4	2X/MONTH		2X/MONTH	
Baja Court	0.2	2X/MONTH		2X/MONTH	
Bayberry Circle	0.4	2X/MONTH		2X/MONTH	
Beechwood Court	0.3	2X/MONTH		2X/MONTH	
Begonia Court	0.4	2X/MONTH		2X/MONTH	
Birdhaven Way	0.4	2X/MONTH		2X/MONTH	
Boxwood Court	0.1	2X/MONTH		2X/MONTH	
Bridgeview Street	0.4	2X/MONTH		2X/MONTH	
Brooktrail Drive	0.2	2X/MONTH		2X/MONTH	
Brooktrail Drive	0.2	2X/MONTH		2X/MONTH	
Burlwood Court	0.1	2X/MONTH		2X/MONTH	
Carmel Court	0.2	2X/MONTH		2X/MONTH	
Chestnut Drive	0.2	2X/MONTH		2X/MONTH	
Chestnut Drive	0.4	2X/MONTH		2X/MONTH	
Clearwood Street	0.4	2X/MONTH		2X/MONTH	
Cloverbrook Circle	0.6	2X/MONTH		2X/MONTH	
Concord Drive	0.8	2X/MONTH		2X/MONTH	
Daffodil	0.6	2X/MONTH		2X/MONTH	
Dawnview Court	0.3	2X/MONTH		2X/MONTH	
Deer Hill Court	0.1	2X/MONTH		2X/MONTH	
El Pintado	0.1	2X/MONTH		2X/MONTH	
El Seco Way	0.4	2X/MONTH		2X/MONTH	

ROUTE ID	APPROXIMATE LENGTH SWEPT	BASELINE		ENHANCED	
		FREQUENCY	PARKING ENFORCEMENT	FREQUENCY	PARKING ENFORCEMENT
Fairside Court	0.1	2X/MONTH		2X/MONTH	
Fawn Glen Court	0.1	2X/MONTH		2X/MONTH	
Freshwater Court	0.2	2X/MONTH		2X/MONTH	
Fieldgate Drive	0.4	2X/MONTH		2X/MONTH	
Fieldgate Drive	0.4	2X/MONTH		2X/MONTH	
Greenmeadow Circle	0.4	2X/MONTH		2X/MONTH	
Havenwood Circle	0.6	2X/MONTH		2X/MONTH	
Hiddenwood Court	0.1	2X/MONTH		2X/MONTH	
Honey Court	0.2	2X/MONTH		2X/MONTH	
Jacqueline Drive	1.4	2X/MONTH		2X/MONTH	
Lislin Court	0.2	2X/MONTH		2X/MONTH	
Live Oak Court	0.1	2X/MONTH		2X/MONTH	
Los Palos Court	0.2	2X/MONTH		2X/MONTH	
Los Palos Drive	0.2	2X/MONTH		2X/MONTH	
Mellowood Street	0.4	2X/MONTH		2X/MONTH	
Mount Whitney Drive	0.6	2X/MONTH		2X/MONTH	
Oak Hills Drive	0.8	2X/MONTH		2X/MONTH	
Oakpoint Drive	0.8	2X/MONTH		2X/MONTH	
Oakpoint Court	0.3	2X/MONTH		2X/MONTH	
Oaktree Court	0.4	2X/MONTH		2X/MONTH	
Oliveglen Court	0.2	2X/MONTH		2X/MONTH	
Peachtree Circle	0.4	2X/MONTH		2X/MONTH	
Peachwillow Street	0.4	2X/MONTH		2X/MONTH	
Pine Creek Court	0.2	2X/MONTH		2X/MONTH	
Quartz Court	0.1	2X/MONTH		2X/MONTH	
Quietpath Court	0.1	2X/MONTH		2X/MONTH	
Rancho Way	0.4	2X/MONTH		2X/MONTH	
Rimcrest Court	0.1	2X/MONTH		2X/MONTH	

ROUTE ID	APPROXIMATE LENGTH SWEPT	BASELINE		ENHANCED		
		CURB MILES	FREQUENCY	PARKING ENFORCEMENT	FREQUENCY	PARKING ENFORCEMENT
Rock Ridge Court	0.2		2X/MONTH		2X/MONTH	
Rock Ridge Way	0.6		2X/MONTH		2X/MONTH	
Rockstream Court	0.1		2X/MONTH		2X/MONTH	
Rome Court	0.2		2X/MONTH		2X/MONTH	
Rosebrook Drive	0.3		2X/MONTH		2X/MONTH	
Rosewood Court	0.4		2X/MONTH		2X/MONTH	
Santa Maria Drive	0.8		2X/MONTH		2X/MONTH	
Shadow Hill Circle	0.4		2X/MONTH		2X/MONTH	
Shady Brook Court	0.1		2X/MONTH		2X/MONTH	
Southwood Drive	0.6		2X/MONTH		2X/MONTH	
Sugartree Drive	1.2		2X/MONTH		2X/MONTH	
Sunpeak Drive	0.3		2X/MONTH		2X/MONTH	
Via Venito Way	0.2		2X/MONTH		2X/MONTH	
Vinewood Court	0.1		2X/MONTH		2X/MONTH	
Westmont Court	0.2		2X/MONTH		2X/MONTH	
Westwood Court	0.2		2X/MONTH		2X/MONTH	
Whispering Oaks Court	0.3		2X/MONTH		2X/MONTH	
Windwood Drive	0.4		2X/MONTH		2X/MONTH	
Willow Avenue	0.4		2X/MONTH		2X/MONTH	
Willow Court	0.4		2X/MONTH		2X/MONTH	
Woodhill Drive	2		2X/MONTH		2X/MONTH	
Zennia Court	0.2		2X/MONTH		2X/MONTH	
TOTAL CURB MILES - AREA 3	27.4					
Amelia Way	0.2		2X/MONTH		2X/MONTH	
Argosy Court	0.1		2X/MONTH		2X/MONTH	

ROUTE ID	APPROXIMATE LENGTH SWPT	BASELINE		ENHANCED	
		FREQUENCY	PARKING ENFORCEMENT	FREQUENCY	PARKING ENFORCEMENT
Balclutha Way	0.6	2X/MONTH		2X/MONTH	
Baltic Sea Court	0.1	2X/MONTH		2X/MONTH	
Barquentine Court	0.1	2X/MONTH		2X/MONTH	
Bora Place	0.1	2X/MONTH		2X/MONTH	
Brickyard Road	0.4	2X/MONTH		2X/MONTH	
Cannery Avenue	0.2	2X/MONTH		2X/MONTH	
Cannery Court	0.2	2X/MONTH		2X/MONTH	
Catamaran Circle, East	0.7	2X/MONTH		2X/MONTH	
Catamaran Circle, North	0.2	2X/MONTH		2X/MONTH	
Catamaran Circle, West	0.4	2X/MONTH		2X/MONTH	
Catamaran Circle, South	0.2	2X/MONTH		2X/MONTH	
Chabot Court	0.2	2X/MONTH		2X/MONTH	
Clipper Drive	0.4	2X/MONTH		2X/MONTH	
Commodore Court	0.1	2X/MONTH		2X/MONTH	
Coral Lane	0.1	2X/MONTH		2X/MONTH	
Cove Way	0.1	2X/MONTH		2X/MONTH	
Dawson Court	0.1	2X/MONTH		2X/MONTH	
Dolphin Drive	0.3	2X/MONTH		2X/MONTH	
Dory Road	0.1	2X/MONTH		2X/MONTH	
Emerson Court	0.2	2X/MONTH		2X/MONTH	
Emerson Drive	0.3	2X/MONTH		2X/MONTH	
Ensign Court	0.1	2X/MONTH		2X/MONTH	
Eveningstar Court	0.1	2X/MONTH		2X/MONTH	
Frigate Court	0.1	2X/MONTH		2X/MONTH	
Galleon Way	0.4	2X/MONTH		2X/MONTH	
Hanlon Place	0.1	2X/MONTH		2X/MONTH	
Hanlon Way	0.6	2X/MONTH		2X/MONTH	
Helm Court	0.1	2X/MONTH		2X/MONTH	

ROUTE ID	APPROXIMATE LENGTH SWEPT	BASELINE		ENHANCED	
		FREQUENCY	PARKING ENFORCEMENT	FREQUENCY	PARKING ENFORCEMENT
Jack London Court	0.2	2X/MONTH		2X/MONTH	
Jack London Drive	0.4	2X/MONTH		2X/MONTH	
Keel Court	0.1	2X/MONTH		2X/MONTH	
Leeward Place	0.1	2X/MONTH		2X/MONTH	
Leeward Way	0.2	2X/MONTH		2X/MONTH	
Lighthouse Court	0.1	2X/MONTH		2X/MONTH	
Lou Ann Place	0.2	2X/MONTH		2X/MONTH	
Mariner Court	0.1	2X/MONTH		2X/MONTH	
Marlin Drive	0.4	2X/MONTH		2X/MONTH	
Martin Eden Court	0.1	2X/MONTH		2X/MONTH	
Merrimac Court	0.1	2X/MONTH		2X/MONTH	
Merrimac Place	0.1	2X/MONTH		2X/MONTH	
Nautilus Court	0.1	2X/MONTH		2X/MONTH	
Nautilus Place	0.4	2X/MONTH		2X/MONTH	
Northstar Court	0.1	2X/MONTH		2X/MONTH	
Northstar Drive	0.2	2X/MONTH		2X/MONTH	
Oceana Drive	0.3	2X/MONTH		2X/MONTH	
Parkview Drive	0.2	2X/MONTH		2X/MONTH	
Polaris Drive	2.4	2X/MONTH		2X/MONTH	
Pram Road	0.1	2X/MONTH		2X/MONTH	
Riptide Court	0.1	2X/MONTH		2X/MONTH	
Ronda Court	0.1	2X/MONTH		2X/MONTH	
Salinas Court	0.1	2X/MONTH		2X/MONTH	
San Benito Drive	0.4	2X/MONTH		2X/MONTH	
San Lucas Drive	0.2	2X/MONTH		2X/MONTH	
San Marcos Blvd.	3.2	2X/MONTH		2X/MONTH	
San Tomas Court	0.2	2X/MONTH		2X/MONTH	
San Tomas Drive	0.2	2X/MONTH		2X/MONTH	

ROUTE ID	APPROXIMATE LENGTH SWEPT	BASELINE		ENHANCED	
		FREQUENCY	PARKING ENFORCEMENT	FREQUENCY	PARKING ENFORCEMENT
Santa Lucia Court	0.1	2X/MONTH		2X/MONTH	
Santa Lucia Drive	0.8	2X/MONTH		2X/MONTH	
Santa Teresa Drive	0.2	2X/MONTH		2X/MONTH	
Schooner Way	0.1	2X/MONTH		2X/MONTH	
Sealane Court	0.1	2X/MONTH		2X/MONTH	
Spinnaker Court	0.1	2X/MONTH		2X/MONTH	
Spinnaker Way	0.6	2X/MONTH		2X/MONTH	
Steinbeck Court	0.1	2X/MONTH		2X/MONTH	
Steinbeck Drive	0.3	2X/MONTH		2X/MONTH	
Tiller Place	0.1	2X/MONTH		2X/MONTH	
Trident Drive	1.4	2X/MONTH		2X/MONTH	
Viking Way	0.8	2X/MONTH		2X/MONTH	
TOTAL CURB MILES - AREA 4	22				
Abbott Avenue	0.4	2X/MONTH		2X/MONTH	
Ackerman Drive	1.2	2X/MONTH		2X/MONTH	
Andrea Way	0.4	2X/MONTH		2X/MONTH	
Apricot Court	0.2	2X/MONTH		2X/MONTH	
Ascot Court	0.1	2X/MONTH		2X/MONTH	
Ashbury Court	0.1	2X/MONTH		2X/MONTH	
Ashbury Way	0.2	2X/MONTH		2X/MONTH	
Atherton Circle	0.6	2X/MONTH		2X/MONTH	
Austin Court	0.1	2X/MONTH		2X/MONTH	
Bancroft Court	0.1	2X/MONTH		2X/MONTH	
Barbara Court	0.1	2X/MONTH		2X/MONTH	
Betty Lane	0.2	2X/MONTH		2X/MONTH	

ROUTE ID	APPROXIMATE LENGTH SWEPT	BASELINE		ENHANCED	
		FREQUENCY	PARKING ENFORCEMENT	FREQUENCY	PARKING ENFORCEMENT
Birchwood Drive	0.4	2X/MONTH		2X/MONTH	
Bodega Drive & Court	0.2	2X/MONTH		2X/MONTH	
Burton Avenue	0.8	2X/MONTH		2X/MONTH	
Camelia Court	0.1	2X/MONTH		2X/MONTH	
Carolyn Drive	0.4	2X/MONTH		2X/MONTH	
Carpetta Circle	0.6	2X/MONTH		2X/MONTH	
Carquines Place	0.2	2X/MONTH		2X/MONTH	
Cecilia Way	0.2	2X/MONTH		2X/MONTH	
Cerrito Court	0.1	2X/MONTH		2X/MONTH	
Chelsea Way	0.4	2X/MONTH		2X/MONTH	
Citrus Court	0.1	2X/MONTH		2X/MONTH	
Country Club Place	0.2	2X/MONTH		2X/MONTH	
Covington Drive	2	2X/MONTH		2X/MONTH	
Crowley Avenue	0.4	2X/MONTH		2X/MONTH	
Crowley Court	0.1	2X/MONTH		2X/MONTH	
Debra Court	0.1	2X/MONTH		2X/MONTH	
Douglas Court	0.1	2X/MONTH		2X/MONTH	
Dover Court	0.1	2X/MONTH		2X/MONTH	
Dover Way	0.2	2X/MONTH		2X/MONTH	
Frontage Road	2	2X/MONTH		2X/MONTH	
Frontage Road	0.7	2X/MONTH		2X/MONTH	
Goff Avenue	0.4	2X/MONTH		2X/MONTH	
Greenwood Place	0.1	2X/MONTH		2X/MONTH	
Huntington Circle	0.6	2X/MONTH		2X/MONTH	
Impala Court	0.1	2X/MONTH		2X/MONTH	
Karen Way	0.2	2X/MONTH		2X/MONTH	
Knox Avenue	0.4	2X/MONTH		2X/MONTH	
Marsh Avenue	0.5	2X/MONTH		2X/MONTH	

ROUTE ID	APPROXIMATE LENGTH SWEPT	BASELINE		ENHANCED	
		FREQUENCY	PARKING ENFORCEMENT	FREQUENCY	PARKING ENFORCEMENT
Matthew Court	0.1	2X/MONTH		2X/MONTH	
Monostory Court	0.1	2X/MONTH		2X/MONTH	
Montevideo Drive	0.6	2X/MONTH		2X/MONTH	
Misty Court	0.1	2X/MONTH		2X/MONTH	
Niles Court	0.2	2X/MONTH		2X/MONTH	
Paige Court	0.1	2X/MONTH		2X/MONTH	
Pamela Way	0.2	2X/MONTH		2X/MONTH	
Range Road	1	2X/MONTH		2X/MONTH	
Ridgecrest Court	0.1	2X/MONTH		2X/MONTH	
Ridgecrest Way	0.4	2X/MONTH		2X/MONTH	
Riesling Court	0.1	2X/MONTH		2X/MONTH	
Rossmoor Court	0.1	2X/MONTH		2X/MONTH	
Royce Way	0.2	2X/MONTH		2X/MONTH	
Salisbury Drive	0.2	2X/MONTH		2X/MONTH	
San Remo Court	0.6	2X/MONTH		2X/MONTH	
San Remo Way	0.6	2X/MONTH		2X/MONTH	
Santa Susana Way	0.2	2X/MONTH		2X/MONTH	
Sea Gull Court	0.1	2X/MONTH		2X/MONTH	
Serrana Court	0.4	2X/MONTH		2X/MONTH	
Serrano Way	0.6	2X/MONTH		2X/MONTH	
Shadow Court	0.1	2X/MONTH		2X/MONTH	
Stockton Court	0.1	2X/MONTH		2X/MONTH	
Teal Court	0.1	2X/MONTH		2X/MONTH	
Thomas Way	0.4	2X/MONTH		2X/MONTH	
Wedgewood Drive	1.6	2X/MONTH		2X/MONTH	
William Way	0.1	2X/MONTH		2X/MONTH	
William Way	1.2	2X/MONTH		2X/MONTH	
TOTAL CURB MI - AREA 5	25				

ROUTE ID	APPROXIMATE LENGTH SWEEP	BASELINE		ENHANCED	
		FREQUENCY	PARKING ENFORCEMENT	FREQUENCY	PARKING ENFORCEMENT
	CURB MILES				
2nd Street, West	0.2	2X/MONTH		2X/MONTH	
4th Street, West	0.2	2X/MONTH		2X/MONTH	
6th Street, West	0.2	2X/MONTH		2X/MONTH	
6th Street, West	0.5	2X/MONTH		2X/MONTH	
7th Street, West	0.6	2X/MONTH		2X/MONTH	
7th Street, West	0.5	2X/MONTH		2X/MONTH	
8th Street, West	0.6	2X/MONTH	2X/MONTH	2X/MONTH	2X/MONTH
9th Street, West	0.8	2X/MONTH	2X/MONTH	2X/MONTH	2X/MONTH
11th Street, West	0.8	2X/MONTH	2X/MONTH	2X/MONTH	2X/MONTH
12th Street, West	0.6	2X/MONTH	2X/MONTH	2X/MONTH	2X/MONTH
13th Street, West	0.1	2X/MONTH		2X/MONTH	
17th Street, West	0.8	2X/MONTH		2X/MONTH	
Aguilar Place	0.1	2X/MONTH		2X/MONTH	
Aiello Street	0.1	2X/MONTH		2X/MONTH	
Andrew Avenue	0.8	2X/MONTH		2X/MONTH	
Babbling Brook Way	0.2	2X/MONTH		2X/MONTH	
Bay Crest Drive	0.2	2X/MONTH		2X/MONTH	
Beacon Street	0.8	2X/MONTH	2X/MONTH	2X/MONTH	2X/MONTH
Black Diamond Street	0.8	2X/MONTH		2X/MONTH	
Bruno Avenue	0.8	2X/MONTH		2X/MONTH	
Burnham Drive	0.4	2X/MONTH		2X/MONTH	
Case Drive	0.2	2X/MONTH		2X/MONTH	
Cider Mill Court	0.2	2X/MONTH		2X/MONTH	
Cornwall Street	0.1	2X/MONTH		2X/MONTH	
Cutter Street	0.4	2X/MONTH	2X/MONTH	2X/MONTH	2X/MONTH
Cutter Street	0.1	2X/MONTH		2X/MONTH	
Cutter Street	0.1	2X/MONTH		2X/MONTH	

ROUTE ID	APPROXIMATE LENGTH SWEEP	BASELINE		ENHANCED	
		FREQUENCY	PARKING ENFORCEMENT	FREQUENCY	PARKING ENFORCEMENT
Devito Street	0.1	2X/MONTH		2X/MONTH	
Dew Drop Circle	0.2	2X/MONTH		2X/MONTH	
DiMaggio Avenue	0.8	2X/MONTH		2X/MONTH	
Edgewater Place	0.3	2X/MONTH		2X/MONTH	
Egret Place	0.1	2X/MONTH		2X/MONTH	
Front Street	0.2	2X/MONTH		2X/MONTH	
Gull Place	0.3	2X/MONTH		2X/MONTH	
Harmony Court	0.2	2X/MONTH		2X/MONTH	
Harmony Way	0.3	2X/MONTH		2X/MONTH	
Herb White Way	0.3	2X/MONTH		2X/MONTH	
Heron Drive	0.1	2X/MONTH		2X/MONTH	
Houser Drive	0.2	2X/MONTH		2X/MONTH	
Jimno Avenue	0.8	2X/MONTH		2X/MONTH	
Jorgensen Court	0.1	2X/MONTH		2X/MONTH	
Jorgensen Drive	0.3	2X/MONTH		2X/MONTH	
Leslie Drive	0.2	2X/MONTH		2X/MONTH	
Linda Vista Street	0.4	2X/MONTH		2X/MONTH	
Locust Drive	0.1	2X/MONTH		2X/MONTH	
Loma Vista Way	0.1	2X/MONTH		2X/MONTH	
Marina Boulevard	1.4	2X/MONTH		2X/MONTH	
Mephram Drive	0.4	2X/MONTH		2X/MONTH	
Mildred Avenue	0.8	2X/MONTH		2X/MONTH	
Mitchum Drive	0.2	2X/MONTH		2X/MONTH	
Monfredo Drive	0.2	2X/MONTH		2X/MONTH	
Montezuma Street	0.2	2X/MONTH	2X/MONTH	2X/MONTH	2X/MONTH
Montezuma Street	0.4	2X/MONTH	2X/MONTH	2X/MONTH	2X/MONTH

ROUTE ID	APPROXIMATE LENGTH SWEEP	BASELINE		ENHANCED		
		CURB MILES	FREQUENCY	PARKING ENFORCEMENT	FREQUENCY	PARKING ENFORCEMENT
Odessa Avenue	0.4		2X/MONTH		2X/MONTH	
Parkside Lane	0.1		2X/MONTH		2X/MONTH	
Pelican Court	0.1		2X/MONTH		2X/MONTH	
Pelican Loop	1.4		2X/MONTH		2X/MONTH	
Plover Place	0.2		2X/MONTH		2X/MONTH	
Rain Drop Circle	0.8		2X/MONTH		2X/MONTH	
River Park Drive	0.4		2X/MONTH		2X/MONTH	
Riverway Drive	0.2		2X/MONTH		2X/MONTH	
Rolfe Drive	0.3		2X/MONTH		2X/MONTH	
Rose Ann Avenue	0.8		2X/MONTH		2X/MONTH	
Sandpiper Drive	0.4		2X/MONTH		2X/MONTH	
Santa Fe Avenue	0.1		2X/MONTH		2X/MONTH	
Sea Point Way	0.3		2X/MONTH		2X/MONTH	
Seasons Drive	0.4		2X/MONTH		2X/MONTH	
Seasons Way	0.2		2X/MONTH		2X/MONTH	
Snow Flake Way	0.4		2X/MONTH		2X/MONTH	
Shoreline Drive	0.3		2X/MONTH		2X/MONTH	
Summer Way	0.6		2X/MONTH		2X/MONTH	
Warren Way	0.8		2X/MONTH		2X/MONTH	
West Street	0.2		2X/MONTH		2X/MONTH	
West Street	0.2		2X/MONTH		2X/MONTH	
West Street	0.2		2X/MONTH	2x/MONTH	2X/MONTH	2x/MONTH
West Street	0.3		2X/MONTH		2X/MONTH	
Winter Way	0.4		2X/MONTH		2X/MONTH	
Woodview Road	0.1		2X/MONTH		2X/MONTH	
York Street	0.4		2X/MONTH	2X/MONTH	2X/MONTH	2X/MONTH
York Street	0.2		2X/MONTH	2X/MONTH	2X/MONTH	2X/MONTH
York Street	0.1		2X/MONTH		2X/MONTH	

ROUTE ID	APPROXIMATE LENGTH SWEPT	BASELINE		ENHANCED	
		FREQUENCY	PARKING ENFORCEMENT	FREQUENCY	PARKING ENFORCEMENT
TOTAL CURB MILES - AREA 6	30.2				
6th Street, East	0.2	2X/MONTH		2X/MONTH	
7th Street, East	0.1	2X/MONTH		2X/MONTH	
8th Street, East	0.4	2X/MONTH		2X/MONTH	
8th Street, East	0.6	2X/MONTH		2X/MONTH	
9th Street, East	0.6	2X/MONTH		2X/MONTH	
9th Street, East	0.4	2X/MONTH	2X/MONTH	2X/MONTH	2X/MONTH
11th Street, East	0.4	2X/MONTH		2X/MONTH	
12th Street, East	1.4	2X/MONTH		2X/MONTH	
15th Street, East	0.4	2X/MONTH	2X/MONTH	2X/MONTH	2X/MONTH
16th Street, East	0.2	2X/MONTH	2X/MONTH	2X/MONTH	2X/MONTH
17th Street, East	0.4	2X/MONTH	2X/MONTH	2X/MONTH	2X/MONTH
Acacia Street	0.2	2X/MONTH		2X/MONTH	
Army Street	0.2	2X/MONTH		2X/MONTH	
Avalon Circle	0.6	2X/MONTH		2X/MONTH	
Avalon Drive	0.1	2X/MONTH		2X/MONTH	
Avon Street	0.2	2X/MONTH		2X/MONTH	
Barrus Avenue	0.2	2X/MONTH		2X/MONTH	
Benjamin Avenue	0.2	2X/MONTH		2X/MONTH	
Billeci Avenue	0.2	2X/MONTH		2X/MONTH	
Birch Street	0.2	2X/MONTH		2X/MONTH	
Biscay Drive	0.2	2X/MONTH		2X/MONTH	
Brighton Drive	0.3	2X/MONTH		2X/MONTH	
Cambria Court	0.1	2X/MONTH		2X/MONTH	

ROUTE ID	APPROXIMATE LENGTH SWEPT	BASELINE		ENHANCED		
		CURB MILES	FREQUENCY	PARKING ENFORCEMENT	FREQUENCY	PARKING ENFORCEMENT
Cambria Lane	0.2	2X/MONTH			2X/MONTH	
Capitola Drive	0.1	2X/MONTH			2X/MONTH	
Capitola Place	0.1	2X/MONTH			2X/MONTH	
Capitola Place	0.1	2X/MONTH			2X/MONTH	
Cardiff Drive	0.4	2X/MONTH			2X/MONTH	
Carpino Avenue	1.4	2X/MONTH			2X/MONTH	
Cedar Street	0.2	2X/MONTH			2X/MONTH	
Central Avenue	0.2	2X/MONTH			2X/MONTH	
Central Avenue	1.4	2X/MONTH			2X/MONTH	
Chester Drive	0.2	2X/MONTH			2X/MONTH	
Chiquite Avenue	0.1	2X/MONTH			2X/MONTH	
Clyde Street	0.1	2X/MONTH			2X/MONTH	
Columbia Street	0.6	2X/MONTH			2X/MONTH	
Corte Linda	0.1	2X/MONTH			2X/MONTH	
Corte Maria	0.1	2X/MONTH			2X/MONTH	
Cross street	0.2	2X/MONTH			2X/MONTH	
Cumberland Street	1	2X/MONTH			2X/MONTH	
Deems Street	0.2	2X/MONTH			2X/MONTH	
Del Tren Avenue	0.2	2X/MONTH			2X/MONTH	
Diane Avenue	0.4	2X/MONTH			2X/MONTH	
East Street	0.2	2X/MONTH	2X/MONTH		2X/MONTH	2X/MONTH
Edwards Avenue	0.2	2X/MONTH			2X/MONTH	
El Pueblo Avenue	0.4	2X/MONTH			2X/MONTH	
Elm Street	0.2	2X/MONTH			2X/MONTH	
Galway Drive	0.3	2X/MONTH			2X/MONTH	
Hawthorne Court	0.1	2X/MONTH			2X/MONTH	
Hawthorne Street	0.2	2X/MONTH			2X/MONTH	
Hermosa Avenue	0.2	2X/MONTH			2X/MONTH	

ROUTE ID	APPROXIMATE LENGTH SWEEP	BASELINE		ENHANCED	
		FREQUENCY	PARKING ENFORCEMENT	FREQUENCY	PARKING ENFORCEMENT
Laurel Street	0.1	2X/MONTH		2X/MONTH	
Los Medanos Street	0.1	2X/MONTH		2X/MONTH	
Los Medanos Street	0.2	2X/MONTH	2X/MONTH	2X/MONTH	2X/MONTH
MacArthur Avenue	0.2	2X/MONTH		2X/MONTH	
Maple Street	0.6	2X/MONTH		2X/MONTH	
Moose Way	0.1	2X/MONTH		2X/MONTH	
Morro Drive	0.3	2X/MONTH		2X/MONTH	
Navy Street	0.2	2X/MONTH		2X/MONTH	
Newport Drive	0.4	2X/MONTH		2X/MONTH	
Norton Street	0.2	2X/MONTH	2X/MONTH	2X/MONTH	2X/MONTH
Oak Place	0.1	2X/MONTH		2X/MONTH	
Patricia Avenue	0.2	2X/MONTH		2X/MONTH	
Pebble Beach Dr. & Loop	0.8	2X/MONTH		2X/MONTH	
Pine Street	0.6	2X/MONTH		2X/MONTH	
Plymouth Drive	0.4	2X/MONTH		2X/MONTH	
Redwood Street	0.6	2X/MONTH		2X/MONTH	
Ronnie Street	0.2	2X/MONTH		2X/MONTH	
Santa Cruz Court	0.3	2X/MONTH		2X/MONTH	
Santa Fe Avenue, East	1.2	2X/MONTH		2X/MONTH	
Seward Drive	0.3	2X/MONTH		2X/MONTH	
Somers Street	0.2	2X/MONTH	2X/MONTH	2X/MONTH	2X/MONTH
Stone Harbour Drive	0.5	2X/MONTH		2X/MONTH	
Treatro Street	0.2	2X/MONTH		2X/MONTH	
Victory Avenue	0.4	2X/MONTH		2X/MONTH	
Vincent Avenue	0.3	2X/MONTH		2X/MONTH	
TOTAL CURB MILES - AREA	25.55				
7					

ROUTE ID	APPROXIMATE LENGTH SWEPT	BASELINE		ENHANCED		
		CURB MILES	FREQUENCY	PARKING ENFORCEMENT	FREQUENCY	PARKING ENFORCEMENT
Alta Vista Circle	1.2		2X/MONTH		2X/MONTH	
Alta Vista Court	0.1		2X/MONTH		2X/MONTH	
Alta Vista Way	0.3		2X/MONTH		2X/MONTH	
Alvarado Avenue	1		2X/MONTH		2X/MONTH	
Atherton Avenue	1.6		2X/MONTH		2X/MONTH	
Augusta Drive	0.2		2X/MONTH		2X/MONTH	
Barcelona Court	0.1		2X/MONTH		2X/MONTH	
Bell Drive	0.2		2X/MONTH		2X/MONTH	
Brookshire Court	0.2		2X/MONTH		2X/MONTH	
Brooktree Court	0.1		2X/MONTH		2X/MONTH	
Buchanan Place	0.4		2X/MONTH		2X/MONTH	
Buena Vista	0.2		2X/MONTH		2X/MONTH	
C Street	0.1		2X/MONTH		2X/MONTH	
Cabrillo Place	0.1		2X/MONTH		2X/MONTH	
Canterberry Place	0.1		2X/MONTH		2X/MONTH	
Casa Verde Way	0.3		2X/MONTH		2X/MONTH	
Castlewood Drive	0.8		2X/MONTH		2X/MONTH	
Chatworth Place	0.4		2X/MONTH		2X/MONTH	
Clairmont Place	0.2		2X/MONTH		2X/MONTH	
Del Cerro	0.1		2X/MONTH		2X/MONTH	
Encina Place	0.2		2X/MONTH		2X/MONTH	
Encinal Place	0.2		2X/MONTH		2X/MONTH	
Enea Drive	0.2		2X/MONTH		2X/MONTH	
Fairway Court	0.2		2X/MONTH		2X/MONTH	
Gold Crest Court	0.4		2X/MONTH		2X/MONTH	
Granite Place	0.1		2X/MONTH		2X/MONTH	
Hillcrest Avenue	0.5		2X/MONTH		2X/MONTH	
Hillsdale Drive	0.4		2X/MONTH		2X/MONTH	

ROUTE ID	APPROXIMATE LENGTH SWEPT	BASELINE FREQUENCY	PARKING ENFORCEMENT	ENHANCED	
				FREQUENCY	PARKING ENFORCEMENT
Kingsberry Place	0.3	2X/MONTH		2X/MONTH	
Kingsford Court	0.1	2X/MONTH		2X/MONTH	
Kingston Place	0.2	2X/MONTH		2X/MONTH	
Kingswood	0.6	2X/MONTH		2X/MONTH	
La Miranda Place	0.2	2X/MONTH		2X/MONTH	
Lemonwood Place	0.1	2X/MONTH		2X/MONTH	
Linscheid Drive	0.8	2X/MONTH		2X/MONTH	
Lois Avenue	0.4	2X/MONTH		2X/MONTH	
Lorraine Avenue	0.6	2X/MONTH		2X/MONTH	
Madoline Street	0.6	2X/MONTH	2X/MONTH	2X/MONTH	2X/MONTH
Mae Avenue	0.4	2X/MONTH		2X/MONTH	
Malibu Place	0.2	2X/MONTH		2X/MONTH	
Manville Avenue	0.5	2X/MONTH		2X/MONTH	
Marks Boulevard	0.6	2X/MONTH		2X/MONTH	
Mori Street	0.2	2X/MONTH		2X/MONTH	
Nina Place	0.1	2X/MONTH		2X/MONTH	
Olympia Circle	0.2	2X/MONTH		2X/MONTH	
Olympia Drive	0.3	2X/MONTH		2X/MONTH	
Orinda Circle	1	2X/MONTH		2X/MONTH	
Orinda Court	0.2	2X/MONTH		2X/MONTH	
Orinda Lane	0.8	2X/MONTH		2X/MONTH	
Oxford Court	0.2	2X/MONTH		2X/MONTH	
Pacini Avenue	0.6	2X/MONTH		2X/MONTH	
Panoramic Avenue	0.5	2X/MONTH		2X/MONTH	
Pappas Street	0.1	2X/MONTH		2X/MONTH	
Petar Court	0.1	2X/MONTH		2X/MONTH	
Petar Lane	0.2	2X/MONTH		2X/MONTH	
Ramona Street	0.6	2X/MONTH		2X/MONTH	

ROUTE ID	APPROXIMATE LENGTH SWEEP	BASELINE		ENHANCED	
		FREQUENCY	PARKING ENFORCEMENT	FREQUENCY	PARKING ENFORCEMENT
Randolf Road	0.2	2X/MONTH		2X/MONTH	
Ravine Drive	0.4	2X/MONTH		2X/MONTH	
Riverview Court	0.1	2X/MONTH		2X/MONTH	
Riverview Drive	1	2X/MONTH		2X/MONTH	
Robinson Avenue	0.8	2X/MONTH		2X/MONTH	
San Carlos Court	0.2	2X/MONTH		2X/MONTH	
San Carlos Place	0.2	2X/MONTH		2X/MONTH	
Seeno Avenue	1.2	2X/MONTH		2X/MONTH	
Sherman Street	0.2	2X/MONTH		2X/MONTH	
Stevenson Street	0.2	2X/MONTH		2X/MONTH	
Sunnyhill Way	0.4	2X/MONTH		2X/MONTH	
Tiffany Drive	0.3	2X/MONTH		2X/MONTH	
Valle Vista	0.4	2X/MONTH		2X/MONTH	
Versailles Place	0.3	2X/MONTH		2X/MONTH	
Vista Diablo	0.1	2X/MONTH		2X/MONTH	
West Boulevard	0.6	2X/MONTH	2X/MONTH	2X/MONTH	2X/MONTH
White Oak Place	0.1	2X/MONTH		2X/MONTH	
Yellowwood Place	0.1	2X/MONTH		2X/MONTH	
TOTAL CURB MILES - AREA 8	27.4				
Alcosta Place	0.1	2X/MONTH		2X/MONTH	
Alpine Court	0.2	2X/MONTH		2X/MONTH	
Alpine Drive	0.5	2X/MONTH		2X/MONTH	
Autumnwind Court	0.2	2X/MONTH		2X/MONTH	
Barrie Court	0.1	2X/MONTH		2X/MONTH	
Barrie Drive	0.6	2X/MONTH		2X/MONTH	
Berg Court	0.1	2X/MONTH		2X/MONTH	

ROUTE ID	APPROXIMATE LENGTH SWEPT	BASELINE		ENHANCED	
		FREQUENCY	PARKING ENFORCEMENT	FREQUENCY	PARKING ENFORCEMENT
Bristol Place	0.1	2X/MONTH		2X/MONTH	
Brookside Drive	0.8	2X/MONTH		2X/MONTH	
Bryce Avenue	0.3	2X/MONTH		2X/MONTH	
Buchanan Court	0.1	2X/MONTH		2X/MONTH	
Calistoga Drive	0.3	2X/MONTH		2X/MONTH	
Campbell Court	0.1	2X/MONTH		2X/MONTH	
Campbell Drive	0.6	2X/MONTH		2X/MONTH	
Carroll Court	0.4	2X/MONTH		2X/MONTH	
Carroll Drive	0.4	2X/MONTH		2X/MONTH	
Cedarbrook Place	0.1	2X/MONTH		2X/MONTH	
Coad Court	0.1	2X/MONTH		2X/MONTH	
Coronado Court	0.1	2X/MONTH		2X/MONTH	
Creekwood Court	0.1	2X/MONTH		2X/MONTH	
Danridge Place	0.1	2X/MONTH		2X/MONTH	
Derby Place	0.1	2X/MONTH		2X/MONTH	
Diamondwood Court	0.2	2X/MONTH		2X/MONTH	
Diehl Way	1	2X/MONTH		2X/MONTH	
El Arroyo Way	0.2	2X/MONTH		2X/MONTH	
El Camino Drive	0.5	2X/MONTH		2X/MONTH	
El Dorado Drive	0.8	2X/MONTH		2X/MONTH	
Fairoaks Way	0.4	2X/MONTH		2X/MONTH	
Fall Street	0.2	2X/MONTH		2X/MONTH	
Foothill Way	0.5	2X/MONTH		2X/MONTH	
Glacier Drive	0.2	2X/MONTH		2X/MONTH	
Glen Canyon Circle	0.2	2X/MONTH		2X/MONTH	
Glen Canyon Court	0.1	2X/MONTH		2X/MONTH	
Glen Canyon Drive	0.2	2X/MONTH		2X/MONTH	
Glen Canyon Drive	0.2	2X/MONTH		2X/MONTH	

ROUTE ID	APPROXIMATE LENGTH SWEPT	BASELINE		ENHANCED		
		CURB MILES	FREQUENCY	PARKING ENFORCEMENT	FREQUENCY	PARKING ENFORCEMENT
Gloria Drive	0.4		2X/MONTH		2X/MONTH	
Goldenhill Drive	1		2X/MONTH		2X/MONTH	
Heights Avenue	0.6		2X/MONTH		2X/MONTH	
Hillview Drive	1.2		2X/MONTH		2X/MONTH	
Horan Court	0.1		2X/MONTH		2X/MONTH	
Inverness Drive	0.8		2X/MONTH		2X/MONTH	
Jensen Circle	0.5		2X/MONTH		2X/MONTH	
Jensen Drive	1		2X/MONTH		2X/MONTH	
Jensen Drive	0.2		2X/MONTH		2X/MONTH	
Jewett Avenue	1.2		2X/MONTH		2X/MONTH	
Jewett Court	0.1		2X/MONTH		2X/MONTH	
Kingsly Drive	1.4		2X/MONTH		2X/MONTH	
Laguna Circle	0.6		2X/MONTH		2X/MONTH	
Laguna Place	0.1		2X/MONTH		2X/MONTH	
Lake Street	0.3		2X/MONTH		2X/MONTH	
Lassen Drive	0.2		2X/MONTH		2X/MONTH	
Linford Court	0.1		2X/MONTH		2X/MONTH	
Mariposa Drive	1		2X/MONTH		2X/MONTH	
McDermott Court	0.1		2X/MONTH		2X/MONTH	
McDermott Drive	0.2		2X/MONTH		2X/MONTH	
McFaul Drive	0.1		2X/MONTH		2X/MONTH	
Meadows Avenue	0.5		2X/MONTH		2X/MONTH	
Metten Avenue	1		2X/MONTH		2X/MONTH	
Mira Loma Drive	0.7		2X/MONTH		2X/MONTH	
Moss Court	0.1		2X/MONTH		2X/MONTH	
Oakbrook Place	0.1		2X/MONTH		2X/MONTH	
Oakdale Place	1		2X/MONTH		2X/MONTH	
Oakshade Court	0.1		2X/MONTH		2X/MONTH	

ROUTE ID	APPROXIMATE LENGTH SWEPT	BASELINE		ENHANCED		
		CURB MILES	FREQUENCY	PARKING ENFORCEMENT	FREQUENCY	PARKING ENFORCEMENT
Olive Way	0.1	2X/MONTH			2X/MONTH	
Palo Verde Drive	0.8	2X/MONTH			2X/MONTH	
Plaza Court	0.1	2X/MONTH			2X/MONTH	
Pueblo Drive	0.4	2X/MONTH			2X/MONTH	
Quail Court	0.1	2X/MONTH			2X/MONTH	
Quercus Lane	0.2	2X/MONTH			2X/MONTH	
Rainier Place	0.1	2X/MONTH			2X/MONTH	
Rangewood Court	0.1	2X/MONTH			2X/MONTH	
Rangewood Drive	0.2	2X/MONTH			2X/MONTH	
Rangewood Drive	0.6	2X/MONTH			2X/MONTH	
Redondo Drive	0.4	2X/MONTH			2X/MONTH	
Regent Drive	0.3	2X/MONTH			2X/MONTH	
Rich Spring Drive	0.1	2X/MONTH			2X/MONTH	
Ridge Drive	0.4	2X/MONTH			2X/MONTH	
Rochelle Avenue	0.1	2X/MONTH			2X/MONTH	
St. Paul Circle	0.6	2X/MONTH			2X/MONTH	
Saddle Horn Court	0.1	2X/MONTH			2X/MONTH	
Saddle Horn Drive	0.1	2X/MONTH			2X/MONTH	
San Juan Drive	1	2X/MONTH			2X/MONTH	
San Miguel Circle	0.6	2X/MONTH			2X/MONTH	
San Simeon Place	0.1	2X/MONTH			2X/MONTH	
Sandalwood Court	0.1	2X/MONTH			2X/MONTH	
Scenic Avenue	0.6	2X/MONTH			2X/MONTH	
Sequoia Drive	0.2	2X/MONTH			2X/MONTH	
Shasta Circle	0.4	2X/MONTH			2X/MONTH	
Sierra Drive	0.4	2X/MONTH			2X/MONTH	
Silver Saddle Court	0.1	2X/MONTH			2X/MONTH	
Silver Saddle Drive	0.4	2X/MONTH			2X/MONTH	

ROUTE ID	APPROXIMATE LENGTH SWEPT	BASELINE		ENHANCED		
		CURB MILES	FREQUENCY	PARKING ENFORCEMENT	FREQUENCY	PARKING ENFORCEMENT
Skyline Place	0.1	2X/MONTH			2X/MONTH	
Springhill Drive	0.4	2X/MONTH			2X/MONTH	
Suzanne Drive	1	2X/MONTH			2X/MONTH	
Thornhill Place	0.1	2X/MONTH			2X/MONTH	
Thornhill Way	0.6	2X/MONTH			2X/MONTH	
Trinity Court	0.1	2X/MONTH			2X/MONTH	
Valley Drive	0.2	2X/MONTH			2X/MONTH	
Ventura Drive	0.2	2X/MONTH			2X/MONTH	
Ventura Drive	0.2	2X/MONTH			2X/MONTH	
Walnut Way	0.1	2X/MONTH			2X/MONTH	
Woodborough Place	0.2	2X/MONTH			2X/MONTH	
Yosemite Drive	1	2X/MONTH			2X/MONTH	
Zion Avenue	0.4	2X/MONTH			2X/MONTH	
TOTAL CURB MILES - AREA	38.2					
9						
Arlington Circle	1	2X/MONTH			2X/MONTH	
Autumnwind Court	0.2	2X/MONTH			2X/MONTH	
Belmont Place	0.1	2X/MONTH			2X/MONTH	
Bliss Avenue	1	2X/MONTH			2X/MONTH	
Bobo Court	0.1	2X/MONTH			2X/MONTH	
Briarcliff Court	0.3	2X/MONTH			2X/MONTH	
Briarcliff Drive	0.3	2X/MONTH			2X/MONTH	
Camelot Court	0.1	2X/MONTH			2X/MONTH	
Casper Street	0.1	2X/MONTH			2X/MONTH	
Catalina Court	0.1	2X/MONTH			2X/MONTH	
Clark Street	0.4	2X/MONTH			2X/MONTH	
Commerce Place	0.2	2X/MONTH			2X/MONTH	

ROUTE ID	APPROXIMATE LENGTH SWEPT	BASELINE		ENHANCED		
		CURB MILES	FREQUENCY	PARKING ENFORCEMENT	FREQUENCY	PARKING ENFORCEMENT
Cypress Way	0.4		2X/MONTH		2X/MONTH	
Diokno	0.1		2X/MONTH		2X/MONTH	
Fairbourn Drive	0.2		2X/MONTH		2X/MONTH	
Fallbrook Court	0.2		2X/MONTH		2X/MONTH	
Fallenleaf Way	0.2		2X/MONTH		2X/MONTH	
Fernwood Court	0.1		2X/MONTH		2X/MONTH	
Fireside Way	0.1		2X/MONTH		2X/MONTH	
Freed Circle	0.4		2X/MONTH		2X/MONTH	
Garcia Avenue	1.6		2X/MONTH		2X/MONTH	
Gladstone Drive	0.4		2X/MONTH		2X/MONTH	
Goldenleaf Way	0.3		2X/MONTH		2X/MONTH	
Granada Drive	0.2		2X/MONTH		2X/MONTH	
Greenbriar Drive	0.2		2X/MONTH		2X/MONTH	
Greenridge Drive	0.6		2X/MONTH		2X/MONTH	
Harbor Court	0.1		2X/MONTH		2X/MONTH	
Heatherwood Court	0.1		2X/MONTH		2X/MONTH	
Heatherwood Drive	1		2X/MONTH		2X/MONTH	
Highgate Way	0.4		2X/MONTH		2X/MONTH	
Lakewood Place	0.1		2X/MONTH		2X/MONTH	
Lawnview Court	0.2		2X/MONTH		2X/MONTH	
Leland Court	0.1		2X/MONTH		2X/MONTH	
Limewood Place	1		2X/MONTH		2X/MONTH	
Lomitas Place	0.2		2X/MONTH		2X/MONTH	
Los Altos Place	0.2		2X/MONTH		2X/MONTH	
Lynbrook Court	0.3		2X/MONTH		2X/MONTH	
Lynbrook Drive	0.6		2X/MONTH		2X/MONTH	
Meadowbrook Avenue	0.4		2X/MONTH		2X/MONTH	
Meadowbrook Circle	1.4		2X/MONTH		2X/MONTH	

ROUTE ID	APPROXIMATE LENGTH SWEPT	BASELINE		ENHANCED		
		CURB MILES	FREQUENCY	PARKING ENFORCEMENT	FREQUENCY	PARKING ENFORCEMENT
Meadows Avenue	0.1	2X/MONTH			2X/MONTH	
Melissa Court	0.1	2X/MONTH			2X/MONTH	
Mondana Place	0.2	2X/MONTH			2X/MONTH	
Natalie Way	0.2	2X/MONTH			2X/MONTH	
Newcastle Way	0.2	2X/MONTH			2X/MONTH	
Norine Drive	0.8	2X/MONTH			2X/MONTH	
Northwood Court	0.1	2X/MONTH			2X/MONTH	
Oakmont Place	0.2	2X/MONTH			2X/MONTH	
Oakridge Court	0.1	2X/MONTH			2X/MONTH	
Oakridge Lane	0.8	2X/MONTH			2X/MONTH	
Oakshade Court	0.1	2X/MONTH			2X/MONTH	
Olivewood Court	0.1	2X/MONTH			2X/MONTH	
Olivewood Drive	0.2	2X/MONTH			2X/MONTH	
Park Place Drive	0.3	2X/MONTH			2X/MONTH	
Pepper Tree Place	0.1	2X/MONTH			2X/MONTH	
Pinewood Place	0.1	2X/MONTH			2X/MONTH	
Pomona Place	0.1	2X/MONTH			2X/MONTH	
Princeton Court	0.2	2X/MONTH			2X/MONTH	
Rialto Court	0.1	2X/MONTH			2X/MONTH	
Richard Place	0.2	2X/MONTH			2X/MONTH	
Rolling Hills Court	0.1	2X/MONTH			2X/MONTH	
Rolling Hills Drive	0.1	2X/MONTH			2X/MONTH	
Rollingwood Place	0.1	2X/MONTH			2X/MONTH	
Roundhill Drive	0.6	2X/MONTH			2X/MONTH	
San Marcos Drive	0.2	2X/MONTH			2X/MONTH	
Sandra Circle	0.6	2X/MONTH			2X/MONTH	
Santa Ana Drive	0.6	2X/MONTH			2X/MONTH	
Sherwood Court	0.1	2X/MONTH			2X/MONTH	

ROUTE ID	APPROXIMATE LENGTH SWEPT	BASELINE		ENHANCED	
		FREQUENCY	PARKING ENFORCEMENT	FREQUENCY	PARKING ENFORCEMENT
Simpson Court	0.1	2X/MONTH		2X/MONTH	
St. Moritz Drive	0.5	2X/MONTH		2X/MONTH	
Stephanie Way	0.1	2X/MONTH		2X/MONTH	
Steven Drive	0.6	2X/MONTH		2X/MONTH	
Stoneridge Drive	0.1	2X/MONTH		2X/MONTH	
Suzanne Drive	0.1	2X/MONTH		2X/MONTH	
Sycamore Drive	0.4	2X/MONTH		2X/MONTH	
Terry Court	0.1	2X/MONTH		2X/MONTH	
Tahoe Place	0.1	2X/MONTH		2X/MONTH	
Venezuela Court	0.1	2X/MONTH		2X/MONTH	
Ventura Drive	2.4	2X/MONTH		2X/MONTH	
Waverly Way	0.2	2X/MONTH		2X/MONTH	
Woodland Drive	0.6	2X/MONTH		2X/MONTH	
TOTAL CURB MILES - AREA 10	27.1				
COMMERCIAL STREETS					
3rd Street	0.8	2X/WEEK		2X/WEEK	
3rd Street	0.4	2X/WEEK		2X/WEEK	
4th Street, East	0.2	2X/WEEK		2X/WEEK	
5th Street, East	0.2	2X/WEEK		2X/WEEK	
5th Street, West	0.1	2X/WEEK		2X/WEEK	
10th Street	2.2	2X/WEEK		2X/WEEK	
Bay Side Drive	0.6	2X/WEEK		2X/WEEK	
Bay Side Drive	0.8	2X/WEEK		2X/WEEK	
Century Boulevard	2.6	2X/WEEK		2X/WEEK	
Century Boulevard	1.8	2X/WEEK		2X/WEEK	
Century Court	0.27	2X/WEEK		2X/WEEK	

ROUTE ID	APPROXIMATE LENGTH SWEEP	BASELINE		ENHANCED	
		FREQUENCY	PARKING ENFORCEMENT	FREQUENCY	PARKING ENFORCEMENT
Century Way	0.08	2X/WEEK		2X/WEEK	
Harbor Street	5	2X/WEEK		2X/WEEK	
Harbor Street	3.8	2X/WEEK		2X/WEEK	
Industry Road	0.2	WEEKLY		WEEKLY	
Leland Road, East	4	2X/WEEK		2X/WEEK	
Leland Road, East	4	2X/WEEK		2X/WEEK	
Marina Boulevard	1.4	2X/WEEK		2X/WEEK	
Marina Boulevard	0.6	2X/WEEK		2X/WEEK	
Presidio Lane	0.2	2X/WEEK		2X/WEEK	
Railroad Avenue	6	2X/WEEK		2X/WEEK	
Railroad Avenue	5.2	2X/WEEK		2X/WEEK	
TOTAL CURB MILES - AREA A	40.45				
Atlantic Avenue	0.6	WEEKLY		WEEKLY	
Buchanan Road	4.4	WEEKLY		WEEKLY	
California Avenue	2.6	WEEKLY		WEEKLY	
California Avenue (East)	1	WEEKLY		WEEKLY	
Civic Avenue	0.4	WEEKLY		WEEKLY	
Civic Avenue	0.4	WEEKLY		WEEKLY	
Davi Avenue	0.8	WEEKLY		WEEKLY	
Freed Avenue	0.3	WEEKLY		WEEKLY	
Garcia Avenue	2.4	WEEKLY		WEEKLY	
Gladstone Drive	2	WEEKLY		WEEKLY	
Kelley Court	0.4	WEEKLY		WEEKLY	
Loveridge Road	3	WEEKLY		WEEKLY	
Markstein Drive	0.2	WEEKLY		WEEKLY	
Martin Street	2.8	WEEKLY		WEEKLY	

ROUTE ID	APPROXIMATE LENGTH SWEEP	BASELINE		ENHANCED	
		FREQUENCY	PARKING ENFORCEMENT	FREQUENCY	PARKING ENFORCEMENT
North Park Blvd.	0.3	WEEKLY		WEEKLY	
Parkside Drive	1.4	WEEKLY		WEEKLY	
Piedmont Way	0.6	WEEKLY		WEEKLY	
Power Avenue	3	WEEKLY		WEEKLY	
Power Avenue	1.2	WEEKLY		WEEKLY	
Range Road	0.6	WEEKLY		WEEKLY	
Range Road	0.6	WEEKLY		WEEKLY	
Range Road	0.4	WEEKLY		WEEKLY	
Stoneman Avenue	1.6	WEEKLY		WEEKLY	
Stoneman Avenue	0.2	WEEKLY		WEEKLY	
Willow Pass Road	2.1	WEEKLY		WEEKLY	
TOTAL CURB MILES - AREA B	33.3				
Bailey Road	2	2X/MONTH		2X/MONTH	
Bailey Road	2	2X/MONTH		2X/MONTH	
Buchanan Road, West	0.8	WEEKLY		WEEKLY	
Crestview Avenue	3.6	WEEKLY		WEEKLY	
Golf Club Court	0.1	WEEKLY		WEEKLY	
Golf Club Road	0.2	WEEKLY		WEEKLY	
John Henry Johnson Pkwy	0.6	WEEKLY		WEEKLY	
Leland Road, West	6.8	WEEKLY		WEEKLY	
TOTAL CURB MILES - AREA C	17.7				
Center Drive	0.2	WEEKLY		WEEKLY	
3rd & Marina Boulevard	0.2	WEEKLY		WEEKLY	
3rd & Cumberland	0.1	WEEKLY		WEEKLY	
6th & Railroad	0.1	WEEKLY		WEEKLY	

ROUTE ID	APPROXIMATE LENGTH SWEPT	BASELINE		ENHANCED	
		FREQUENCY	PARKING ENFORCEMENT	FREQUENCY	PARKING ENFORCEMENT
Buchanan Park	0.3	WEEKLY		WEEKLY	
City Hall	0.8	WEEKLY		WEEKLY	
City Park	0.5	WEEKLY		WEEKLY	
Golf Course Parking Lot	0.6	WEEKLY		WEEKLY	
Harbor & Presidio Lane	0.1	WEEKLY		WEEKLY	
Marina Boulevard	0.9	WEEKLY		WEEKLY	
Marina Park	0.1	WEEKLY		WEEKLY	
Neighborhood Center	0.7	WEEKLY		WEEKLY	
Riverview Park	0.4	WEEKLY		WEEKLY	
Small World Park	0.4	WEEKLY		WEEKLY	
Stoneman Park	0.3	WEEKLY		WEEKLY	
Yosemite & Railroad Ave	0.1	WEEKLY		WEEKLY	
TOTAL CURB MILES - AREA D	5.8				
14th Street	0.8	WEEKLY		WEEKLY	
Loveridge Road	2.2	WEEKLY		WEEKLY	
Solari Street	0.8	WEEKLY		WEEKLY	
DDSD Parking Lot & Arcy Lane	3	WEEKLY		WEEKLY	
Civic Center Parking Lot	1.1	WEEKLY		WEEKLY	
TOTAL CURB MILES - AREAS D & E	7.9				

QF-5: Full-Capture Treatment Devices

As defined by the Municipal Regional Stormwater Permit (MRP), a full-capture system or device is any single device or series of devices that traps all particles retained by a 5 mm mesh screen and has a design treatment capacity of not less than the peak flow rate (Q) resulting from a one-year, one-hour, storm in the sub-drainage area. A list of the full-capture systems and devices recognized by the San Francisco Bay Regional Water Quality Control Board (Water Board) is included in *Trash Load Reduction Tracking Method Report* (BASMAA 2011e). Trash loads reduced via publically or privately owned and operated devices within a Permittee's jurisdictional area that have been recognized by the Water Board as full-capture may be used to demonstrate attainment of trash load reduction goals.

Baseline Level of Implementation

Prior to adoption of the MRP, some Permittees installed and maintained full capture devices. To avoid penalizing these early implementers, an applicable control measure implemented within a Permittee's jurisdictional area prior to the effective date of the MRP will be credited equally to a control measure implemented after the effective date. Therefore, the baseline level of implementation is no trash full-capture devices have been installed.

Enhanced Level of Implementation

One full-capture treatment device will be installed in the City of Pittsburgh prior to July 1, 2014, as listed on Table QF-6-1. The device listed on this table is an enhanced trash control measure. Table QF-6-1 also includes the area treated and the calculated trash load reduced from the full-capture treatment device. The calculation is consistent with the approach described in the *Trash Load Reduction Tracking Method Report* (BASMAA 2011e).

Percent Reduction from Enhancements

The total estimated annual volume of trash that will be reduced by July 1, 2014 as a result of implementing full capture devices is 17.4 cubic feet. This volume is equal to approximately a 0.79 percent reduction in the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of Pittsburgh. Both values provided within this section are included in Trash Load Reduction Summary Table included in Section 4.

Table QF-5-1. Trash full-capture treatment device within the jurisdictional boundaries of the City of Pittsburgh that is planned for installation by July 1, 2014.

[illegible]

QF-6: Creek/Channel/Shoreline Cleanups

Creek/channel/shoreline cleanups have been successful in removing large amounts of trash from San Francisco Bay area creeks and waterways; and increasing citizen's awareness of trash issues within their communities. Creek/channel/shoreline cleanups are conducted as single-day events or throughout the year by volunteers and municipal agencies. Since volunteers and municipal agencies have the common goal of clean creeks and waterways, their efforts sometimes overlap. This is apparent with some municipal agencies using volunteers to help assess and clean designated trash hot spots during single-day volunteer events.

Baseline Level of Implementation

Trash reduced via creek/channel/shoreline cleanups was not accounted for in the City of Pittsburg's baseline trash load described in Section 2.0. Therefore, implementation of any of the control measures described in this section is considered to be an enhancement and can be used to demonstrate progress towards load reduction goals.

Enhanced Level of Implementation

Prior to July 1, 2014, the City of Pittsburg will conduct MRP-required⁴ and the following non MRP-required creek/channel/shoreline cleanups⁵ listed below. Both types of cleanups will be conducted each year and the volume of trash removed will be tracked to demonstrate trash loads reduced.

The City of Pittsburg will continue to conduct yearly creek hot spot clean ups per Provision C.10.b., and report the loads removed on our annual report.

Volunteer collaborative activities that the City will host include:

- The yearly Great Pittsburg Clean Up event, (one day event) which takes place in the Spring in conjunction with the National Keep America and California Clean Program.
- The City is re-launching the Adopt a Spot Program, which will be a year-round commitment by participants.

Permittee-led cleanup activities include:

- Removal and documentation of homeless encampments
- Regular creek maintenance
- Illegal sump site correction

Percent Reduction from Enhancements

The total estimated annual volume of trash that will be reduced by July 1, 2014 as a result of implementing creek/channel/shoreline cleanups is 132cubic feet. This volume is equal to approximately a 5 percent reduction in the baseline trash load to urban creeks from the municipal separate storm sewer system (MS4) owned and operated by the City of Pittsburg. Both values provided within this section are included in Trash Load Reduction Summary Table included in Section 4.

⁴ Creek/channel/shoreline cleanups conducted in accordance with Permit Provision C.10.b.

⁵All "other" creek/channel/shoreline cleanups conducted by a municipality that are not required by Provision C.10.b.

5.0 SUMMARY OF TRASH CONTROL MEASURE ENHANCEMENTS

The City of Pittsburg is committed to reducing the potential for trash impacts in local water bodies in the San Francisco Bay Area. The planned enhanced trash control measures described in Section 3.0 are also listed in Table 4-1. The enhancements are intended to comply with the 40% trash load reduction goal in MRP provision C.10.

Table 5-1 summarizes the planned activities, or ongoing efforts that the City of Pittsburg will undertake prior to July 1, 2014 to meet the required 40% trash load reduction.

Table 5-1. Planned enhanced trash control measure implementation within the jurisdictional boundaries of the City of Pittsburg and associated trash loads reduced.

Trash Control Measure	Summary Description of Control Measure	% Reduction (Credits)	Trash Load Reduced	Cumulative % Reduction (Compared to Baseline)
Single-use Carryout Plastic Bag Ordinance (CR-1)	Adopt ordinances to ban single-use plastic bags at all retailers except restaurants	10	1,593	13.2
Polystyrene Foam Food Service Ware Ban (CR-2)	Amend City's existing ban of polystyrene foam food ware at City sponsored events, and all food service vendors.	8	1,274	20.9
Public Education and Outreach Programs (CR-3)	Implement/enhance advertising campaigns, outreach to school age children, use of free media, and community outreach events	8	1,274	28.6
Activities to Reduce Trash from Uncovered Loads (CR-4)	Amend existing language in franchise agreements with local landfills and transfer station, and implement enhanced enforcement of existing ordinance for covered loads	5	796	33.4
Anti-Littering and Illegal Dumping Enforcement Activities (CR-5)	Enhance investigation for illegal dumping, continue use of surveillance cameras, use of physical barriers	4	637	37.3
Improved Trash Bin/Container Management (Municipally or Privately-Controlled) (CR-6)	Enhance enforcement of existing ordinance to ensure property owners have contracts for refuse service and appropriate refuse containers are used. City will re-evaluate placement and use of containers in public areas, and enlist cooperation of businesses to form Business Improvement Districts	8.7	1,387	45.7

Trash Control Measure	Summary Description of Control Measure	% Reduction (Credits)	Trash Load Reduced	Cumulative % Reduction (Compared to Baseline)
Enhanced On-land Trash Cleanups (Volunteer and/or Municipal) (QF-1)	Re-establish the Adopt a Spot program, document removal of Homeless Encampments	NA	340	47.8
Enhanced Street Sweeping (QF-2) – (Existing and Future Enhanced)	Continue enhanced street sweeping	NA	304	49.6
Full-capture Treatment Devices (QF-5)	Installation of a Storm Flo Full Trash Capture Screen	NA	130	50.4
Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal) (QF-6)	Conduct yearly Great Pittsburgh Cleanup, Adopt a Spot Program, Tracking and documenting cleanup of homeless encampments	NA	847	55.5

5.1 Annual Reporting and Progress Towards Trash Load Reduction Goal(s)

Consistent with MRP Provision C.10.d (i), the City of Pittsburgh intends to report on progress towards MRP trash load reduction goals on an annual basis beginning with the Fiscal Year 2011-2012 Annual Report. Annual reports will include:

1. A brief summary of all enhanced trash load reduction control measures implemented to-date;
2. The dominant types of trash likely removed via these control measures;
3. Total trash loads removed (credits and quantifications) via each control measure implementation; and
4. A summary and quantification of progress towards trash load reduction goals.

Similar to other MRP provision, annual reporting formats will be consistent region-wide. Annual reports are intended to provide a summary of control measure implementation and demonstrate progress toward MRP trash reduction goals. For more detailed information on specific control measures, the City of Pittsburgh will retain supporting documentation on trash load reduction control measure implementation. These records should have a level of specificity consistent with the trash load reduction tracking methods described in the *BASMAA Trash Load Reduction Tracking Method Technical Report* (BASMAA 2011e).

5.2 Considerations of Uncertainties

Baseline trash loading and load reduction estimates are based on the best available information at the time this Short-Term Plan was developed. As with any stormwater loading and reduction estimate, a number of assumptions were used during calculations and therefore uncertainty is inherent in the baseline trash load estimate presented in Section 2.0 and the load reduction estimate presented in this section. For these reasons, the baseline loading estimates presented in this plan should be considered first-order estimates. During the implementation of this Short-Term Plan and subsequent plans, additional information may become available to allow the calculation of a more robust baseline load.

6.0 IMPLEMENTATION SCHEDULE

Implementation of enhanced trash control measures by the City of Pittsburgh is currently planned to occur in a timeframe consistent with MRP requirements. A preliminary implementation schedule for all planned enhancements is described in Table 5-1. This schedule provides a timeframe for reducing trash discharged from the City of Pittsburgh's MS4 by 40%.

Based on new information that becomes available during the implementation of this Short-Term Plan (e.g., revisions to baseline loading estimates or load reduction credits of quantification formulas), the City of Pittsburgh may choose to amend or revise this Plan and/or the associated implementation schedule. If revisions or amendments occur, a revised Short-Term Plan and implementation schedule will be submitted to the Water Board via the City of Pittsburgh's annual reporting process.

Table 6-1. Preliminary implementation schedule for enhanced trash control measures in the City of Pittsburgh

Trash Control Measure	Beginning Date of Implementation
Single-use Carryout Plastic Bag Ordinance (CR-1)	2013
Polystyrene Foam Food Service Ware Ban (CR-2)	2012
Public Education and Outreach Programs (CR-3)	2012
Activities to Reduce Trash from Uncovered Loads (CR-4)	2012
Anti-Littering and Illegal Dumping Enforcement Activities (CR-5)	2012
Improved Trash Bin/Container Management (Municipally or Privately-Controlled) (CR-6)	2012
On-land Trash Cleanups (Volunteer and/or Municipal) (QF-1)	2012
Enhanced Street Sweeping (QF-2)	2012
Full-capture Treatment Devices (QF-5)	2012
Creek/Channel/Shoreline Cleanups (Volunteer and/or Municipal) (QF-6)	2012

7.0 REFERENCES

- Allison R.A. and F.H.S. Chiew 1995. Monitoring stormwater pollution from various land uses in an urban catchment. Proceedings from the 2nd International Symposium on Urban Stormwater Management, Melbourne, 551-516.
- Allison, R.A., T.A. Walker, F.H.S. Chiew, I.C. O'Neill and T.A McMahon 1998. From Roads to rivers: Gross pollutant removal from urban waterways. Report 98/6. Cooperative Research Centre for Catchment Hydrology. Victoria, Australia. May 1998.
- Armitage, N. 2001. The removal of Urban Litter from Stormwater Drainage Systems. Ch. 19 in Stormwater Collection Systems Design Handbook. L. W. Mays, Ed., McGraw-Hill Companies, Inc. ISBN 0-07-135471-9, New York, USA, 2001, 35 pp.
- Armitage, N. 2003. The removal of urban solid waste from stormwater drains. Prepared for the International Workshop on Global Developments in Urban Drainage Management, Indian Institute of Technology, Bombay, Mumbai India. 5-7 February 2003.
- Armitage, N. 2007. The reduction of urban litter in the stormwater drains of South Africa. Urban Water Journal Vol. 4, No. 3: 151-172. September 2007.
- Armitage N., A. Rooseboom, C. Nel, and P. Townshend 1998. "The removal of Urban Litter from Stormwater Conduits and Streams. *Water Research Commission* (South Africa) Report No. TT 95/98, Pretoria.
- Armitage, N. and A. Rooseboom 2000. The removal of urban litter from stormwater conduits and streams: Paper 1 – The quantities involved and catchment litter management options. Water S.A. Vol. 26. No. 2: 181-187.
- BASMAA (Bay Area Stormwater Management Agencies Association). 2011a. Progress Report on Methods to Estimate Baseline Trash Loads from Bay Area Municipal Stormwater Systems and Track Loads Reduced. February 2011.
- BASMAA (Bay Area Stormwater Management Agencies Association). 2011b. Method to Estimate Baseline Trash Loads from Bay Area Municipal Stormwater Systems: Technical Memorandum #1. Prepared by EOA, Inc. April 2011.
- BASMAA (Bay Area Stormwater Management Agencies Association). 2011c. Sampling and Analysis Plan. Prepared by EOA, Inc. April 2011.
- BASMAA (Bay Area Stormwater Management Agencies Association). 2011d. Trash Load Reduction Tracking Method: Technical Memorandum #1 – Literature Review. Prepared by EOA, Inc. May 2011.
- BASMAA (Bay Area Stormwater Management Agencies Association). 2011e. Trash Load Reduction Tracking Method: Technical Report. Prepared by EOA, Inc. XXXX 2011
- BASMAA (Bay Area Stormwater Management Agencies Association). 2012. Trash Baseline Generation Rates: Technical Report. Prepared by EOA, Inc. XXXX 2012.
- County of Los Angeles. 2002. Los Angeles County Litter Monitoring Plan for the Los Angeles River and Ballona Creek Trash Total Maximum Daily Load. May 30, 2002.
- County of Los Angeles. 2004a. Trash Baseline Monitoring Results Los Angeles River and Ballona Creek Watershed. Los Angeles County Department of Public Works. February 17, 2004.

County of Los Angeles 2004b. Trash Baseline Monitoring for Los Angeles River and Ballona Creek Watersheds. Los Angeles County Department of Public Works. May 6, 2004.

County of Los Angeles, Department of Public Works, Environmental Programs Division. 2007. *An Overview of Carryout Bags in Los Angeles County: A Staff Report to the Los Angeles County Board of Supervisors*. Alhambra, CA. http://dpw.lacounty.gov/epd/PlasticBags/PDF/PlasticBagReport_08-2007.pdf. August 2007.

Kim, L.H, M. Kayhanian, M.K. Stenstrom 2004. Event mean concentration and loading of litter from highways during storms. *Science of the Total Environment* Vol 330: 101-113.